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DEPARTMENT OF AGRICULTURE

Bulletin No. 200

SKIM-MILK CHEE

By

ENOS H. HESS, M.S.,

Lancaster, Pa.

HARRISBURG:
C. E. AUGHINBAUGH, PRINTER TO THE STATE OF PENNSYL
1910

Commonwealth of Pennsylvania.

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PREFACE.

There are few articles of food that contain as much nourishment in the same bulk, and that come to the table in so great a variety of forms, as cheese.

A pound of cheese contains nearly three times the amount of nutrient matter that is contained in a pound of beef, and it bears about the same relation in food value to butter.

It is not only a very nutritious food, but it is also classed among the most wholesome articles that go to make up the supply of a good table, so that when its cost is compared with the cost of other like nutritious foods its importance in making up the family ration is apparent.

Cheese that is made from the whole milk, or milk from which the butter fat has not been taken, is less nutritious than that which is made from skim-milk, while skim-milk when made into cheese brings, in the market, nearly, if not quite, as much as can be obtained from milk from which the butter fat has not been removed. Hence this bulletin has been prepared to call attention to, and describe methods used in the manufacture of skim-milk cheese, of which there are several varieties that are very popular throughout the country, and especially in large sections of our own State.

N. B. CRITCHFIELD,
Secretary of Agriculture.

LETTER OF TRANSMITTAL.

Lancaster, Pa., October 17, 1910.

Hon. N. B. Critchfield, *Secretary of Agriculture.*

Dear Sir: I have the honor to submit herewith a bulletin on "Skim-milk Cheese," as made and sold in Lancaster county, Pa.

The advanced agricultural standing of Lancaster county may be attributed to various causes. A dairy of 10 to 12 cows is quite common on a 75 to 100 acre farm. Where dairying is made a specialty, 18 to 20 cows are usually kept. The value of the skim-milk per year from 12 cows, producing 5,000 pounds of milk each, at 25 cents per hundred (the approximate feeding value of skim-milk when fed to calves or hogs) is about $125.00. At the price at which the various skim-milk cheese sell, the Lancaster county dairymen are realizing $300 to $750 for the same amount of skim-milk. The reader may think that $1.50 per hundred for skim-milk, when made into cheese, is extortion, but so long as the supply of the "right kind" is not equal to the demand the extortion is likely to continue. In passing through any of the six markets of Lancaster city, one will note that a majority of the farmers sell one or two of the varieties of skim-milk cheese herein described. Unquestionably the proceeds from the dairy by-products is one cause of the advanced agricultural standing of Lancaster county.

The method of manufacture of the different varieties of skim-milk cheese, herein described, varies slightly with different dairymen. The practice of several representative dairies will be described with such supplementary remarks as will enable the novice to adapt the methods given to his or her conditions.

It is generally considered by scientists that the process of fermentation, properly controlled, aids in the digestibility of cheese. We trust that one or more of the Experiment Stations will investigate the matter of digestibility of the different varieties of skim-milk cheese; also how much, if any, milk sugar is retained in the egg or curd cheese.

The author is indebted to Misses C. Z. Hess, J. T. Harnish, J. G. Harnish and Wm. Shank, for some of the details of the art of cheese making herein described.

Hoping this bulletin will aid the dairyman in securing an enlarged income and the townsfolk a nutritious economical food, I am

Your obedient servant,

ENOS H. HESS.

SKIM-MILK CHEESE.

THE CURD.

The curd of milk is the material of which cheese is made. This consists of a nitrogenous substance closely resembling albumen of eggs, blood and vegetable matter, fibrin of flesh, gluten of wheat, oats, etc., and legumin of peas, beans and other leguminous plants.

The curd or casein will thicken or clabber naturally as the result of the milk-sugar decomposing and forming lactic acid. The acid thus formed combines with the free soda which always exists in normal milk in its fresh state, and this combination goes on until the alkali is all exhausted, when acid begins to accumulate.

Cheddar and many other cheese are made by treating the sweet milk with rennet which coagulates the curd or casein. The lactic ferment plays an important part in the future ripening of these cheese the same as those made from "sour curd."

COTTAGE CHEESE *(Schmierkase).*

In the manufacture of cottage cheese, the skim-milk is allowed to sour until the casein has formed into a clabber. The whey is then removed. It can be removed without heating, by draining through muslin; but it is better to heat the clabbered milk to about 85° F. While warm, it is poured in a bag made of thin muslin, or preferably of crash toweling, and allowed to drain for 20 to 24 hours. The bag can be hung over a vessel so as to collect the whey if desired. The drained curd is then made fine by running through a curd mill as per Figure No. 1.

The mill (Fig. 1), is made by T. H. Smith, Myerstown, Pa., but can be made by any tinsmith. The size described will fit into a gallon crock. The cone is made of perforated tin No. 0, (20 perforations per inch). The cone is 5 inches long and 5½ inches in diameter at top. The top is made of heavy tin 7 inches in diameter at top and 5½ inches at bottom. An inch of No. 8 or 9 wire is soldered on each side. The wire serves as a support when the mill is placed in a crock. The arch or handle on top is made of heavy tinned strap iron with small hole in center for handle. The ends are fit into a notched ear which allows the arch to be removed when the mill is to be washed. The triangular board is made of hard wood so as to fit on inside of cone. The right side edges of the board are beveled. On the top a small iron washer with square hole is fastened, into which the turning handle is placed.

The curd, when ground, can be thinned with milk or cream if too thick. By the addition of cream the flavor is materially improved, but for marketing, heavy cream seasoning would likely be unprofitable. It is eaten as a side dish or spread on bread and sweetened with molasses, etc. Some people use pepper and salt in seasoning.

In preparing for market, a muslin or linen cloth is placed in an ordinary soup bowl which is then filled with cheese and the cloth folded. The cakes are then placed in a water-tight vessel, such as a dishpan or pail, to convey to market. The purchaser is expected to have a bowl or pail into which the cheese can be emptied out of the cloth.

About 1½ pounds sell for 5 cents, or 3 1-3 cents per pound. 100 pounds of skim-milk produces 18 or 20 pounds of cheese, or 60 to 70 cents worth.

BOILED CHEESE, POT CHEESE, CUP CHEESE, SCALDED CHEESE,
(Briekase.)

The skim-milk is allowed to clabber as for cottage cheese. The clabbered milk is heated slowly to 130° or 150° F., placed in cheese bag and whey extracted by pressure. If the amount of curd is small, the whey can be sufficiently extracted by hand pressure and wringing the bag. The whey should be pressed out thoroughly while warm. The curd is then ground fine with a mill similar to the one used for cottage cheese. The cone is made of galvanized wire netting 4 to 5 meshes to the inch instead of No. 0 perforated tin as described for cottage cheese. A simple and more rapid method is to have a pan with sieved botton as per Figure No. 2.

A heavy tin dish-pan can be used for the purpose. The bottom is cut out leaving an outer rim one inch wide on which the screen is soldered. The galvanized wire screen should be four meshes to the inch. By rubbing the curd through the screen it will be made fine enough to set away for ripening. The lumps of curd should not be larger than a small pea for best results. The breaking can be done entirely by hand, but takes considerably longer than with a sieved pan.

The ground curd is then placed in any convenient vessel, but preferably in a shallow granite dish or stone crock. The fermentation proceeds the most rapidly when the layer of curd is not over four inches thick. The vessel should be covered with thin muslin to prevent contamination by flies, and yet allow free access of air. In the winter the cloth serves as a heat conserver and dust protector. In summer the dish is set in a cool place, but in winter it must be kept where it is warm. The curd will need to be mixed and the lumps which form as the fermentation progresses must be broken up once each day

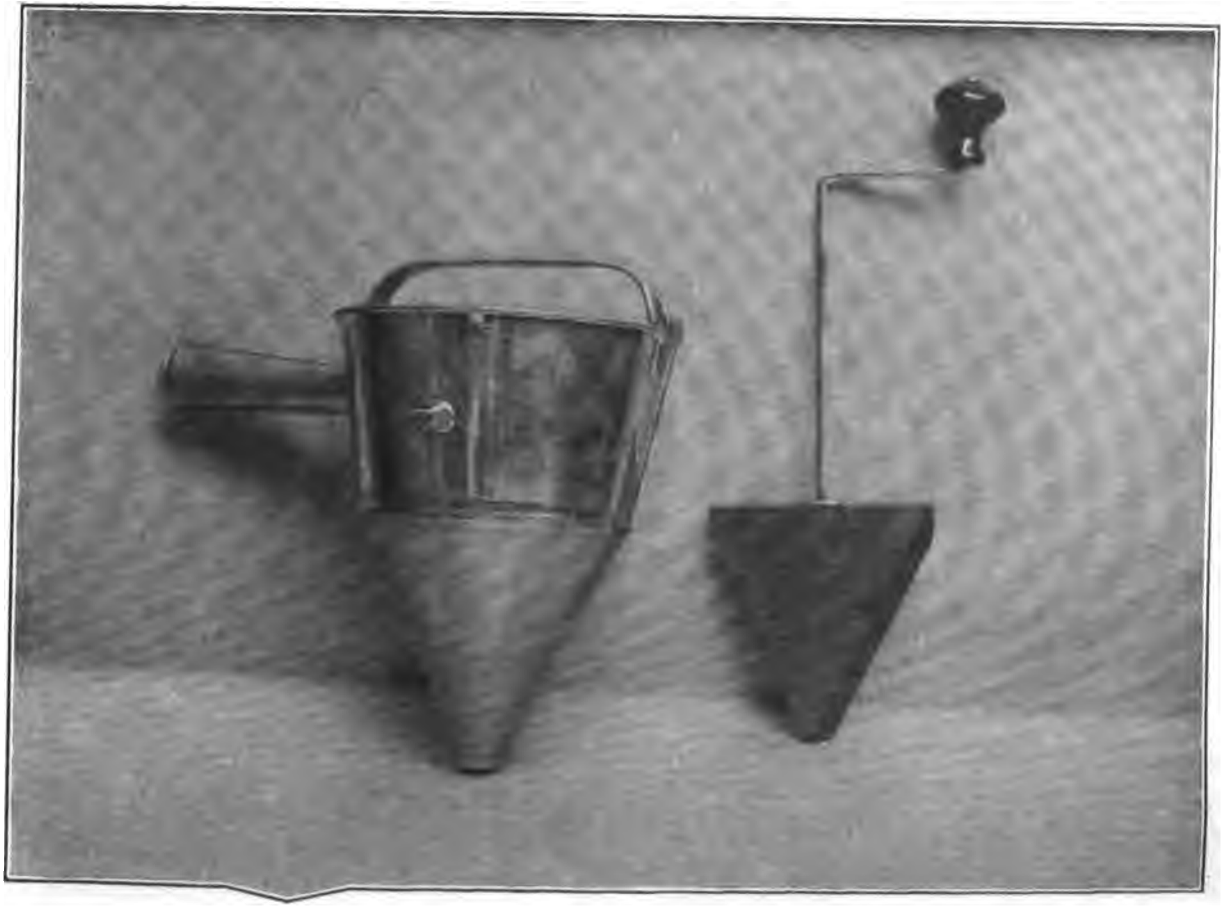

Fig. 1. Curd Mill.

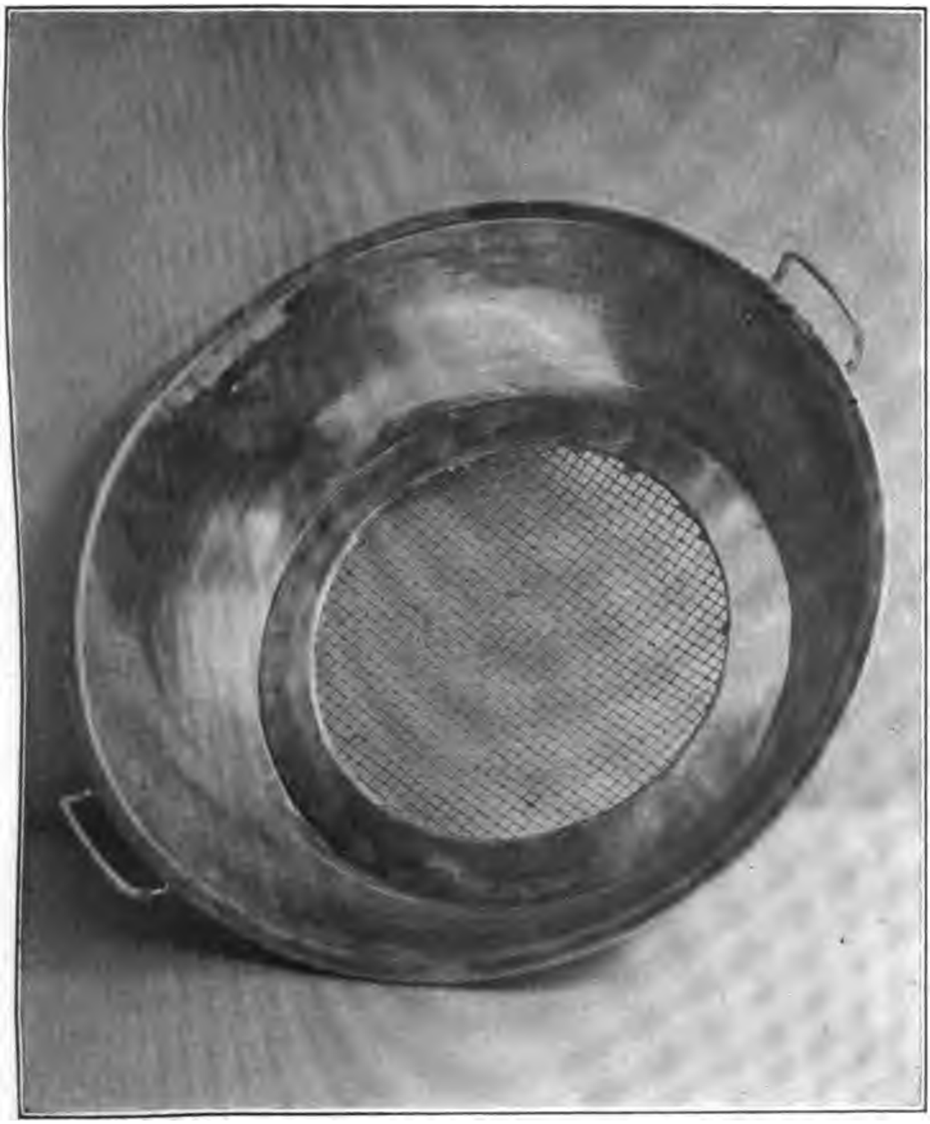

Fig. 2. Sieved Pan.

to insure even ripening or fermentation through the entire mass. Three to five days are required for the fermentation. It can be materially hastened by mixing baking-soda with the curd. Some people object to the soda being used as it materially changes the flavor of the cheese. However, in cold weather it is more frequently used than in warm weather. When soda is used, about one-half tablespoonful to three gallons of curd is mixed with the curd at the beginning of the fermentation process and another tablespoonful added when the curd begins to heat which is on the second or third day. At about the end of the second day of the ripening period the curd should be salted at the rate of one ounce of salt to three pounds of curd, more or less to suit taste. In ripening, the curd changes from a white to a dull straw color. When about three-fourths of each curd grain has fermented or changed in color, it is ready to be boiled.

To boil, it should be put into a shallow frying or baking pan about four inches deep, and water added in the proportion of one part water to six parts curd; less water in summer than in winter. It is then brought to the boiling point, being constantly stirred to prevent burning and allowed to boil for about five minutes or until the lumps are all dissolved and a smooth, somewhat mucilagenous mass is formed. While warm, it is poured into the marketing vessels —granite dishes, cups, bowls, etc.

An ordinary teacupful sells for three cents or two for five cents. A soup-bowlful or seven-eighths pint for five cents. Per pound it would equal five and one-half to seven cents. 100 pounds of skim-milk produces 12 to 14 pounds "Boiled Cheese" which sells for 65 cents to $1.00. The amount of heat applied to the curdled milk and amount of water added in boiling make the amount of cheese obtained variable.

DUTCH CHEESE, BALL CHEESE, *(Deutcherkase.)*

Natural Fermentation Method.

The skim-milk is allowed to clabber as for cottage or boiled cheese. If sweet separator skim-milk is used it will usually clabber sufficiently in two days. The second day it can be set in the sun's rays or in a warm room. When sufficiently clabbered the whey will come to the top at side of can. It is then poured into a bag made of crash toweling and placed in box, having slats on bottom to allow the whey to run off easily, and weighted. The cover to the box can be made so as to slide into the box and fastened to a fulcrum to which a weight can be applied; but a large stone on the loose top will do to press the whey out. After draining for twelve hours the bag should be turned and the curd well shaken up and again pressed for six to ten hours. Some of the dairymen heat the clabbered milk to 85° or 90° F. and then press. The boiling decreases the amount of cheese obtainable from a given amount of milk.

The drained curd is next salted at the rate of one-half to three-fourths ounces per pound of curd, to suit taste, and thoroughly mixed until the particles of curd hang well together. The curd is then made into balls about the size and shape of a tomato. They vary in weight from six to eight ounces as made by the different dairymen. The balls are then placed on drying boards as per Figure No. 3.

The Drying Board.

The boards can be made any convenient size. In Fig. 3, the boards are partly drawn out. For a small dairy the above drying rack is very satisfactory. It is made of light lumber, lath placed 5 to 6 inches apart serving as cleates for the boards or shelves. The sides of the rack are covered with fine wire netting. One end is provided with a door. The advantage of a closed shelf rack is, that it can be moved to different places to suit the conditions of the weather. In clear, dry weather it is best to dry the balls in a cellar or slightly ventilated room; but in humid and cloudy weather the rack can be placed on the porch or any convenient place to allow free access of air. The fresh balls should be placed on the bottom shelf and elevated as the drying period continues. Where the cheese is to be made on a large scale, it would pay to have a building built for the purpose in which the temperature and humidity could be controlled. Figure 82, page 379 in The Dairyman's Manual, by Henry Stewart, gives a good illustration of how a drying room should be constructed. In the winter season the drying must be done in a warm room. When no better place is available it may be done in the furnace cellar, cupboard near stove, etc. It requires about six days in summer and ten to twelve days in winter to dry the balls sufficiently to be put into the curing room or box. During the drying period the balls should be turned as soon as they can be handled without breaking, which is about from 6 to 10 days in winter and 3 to 4 days in summer, Care needs to be exercised in turning the balls so as not to break them. In Figure 3 a few balls will be noticed that are broken. Figure 4 (a) and 4 (b) show a ball in good condition and one that is broken after being dried four days.

Figure 4 (c) shows the mold formed on the outside of the ball after drying 8 days and the reduction in size. The balls lose 45 to 50 per cent. in weight while on the drying boards. When the ball becomes broken, as in Figure 4 (b), it is practically worthless as the mold would penetrate the entire mass of the ball and cause an excess of waste when cleaned for the table or market. There are several

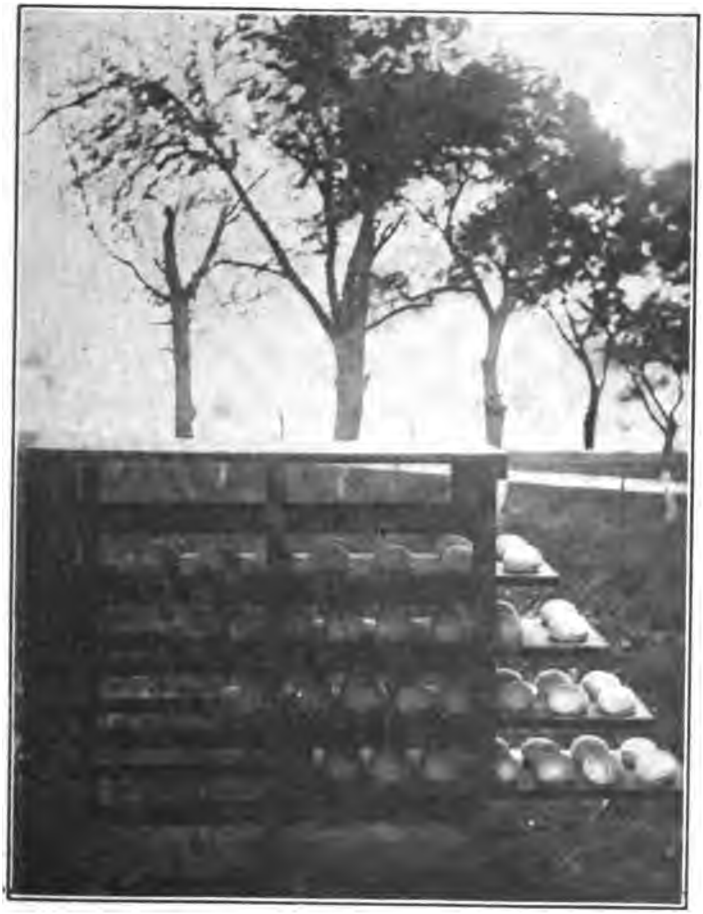

Fig. 3. Drying Board.

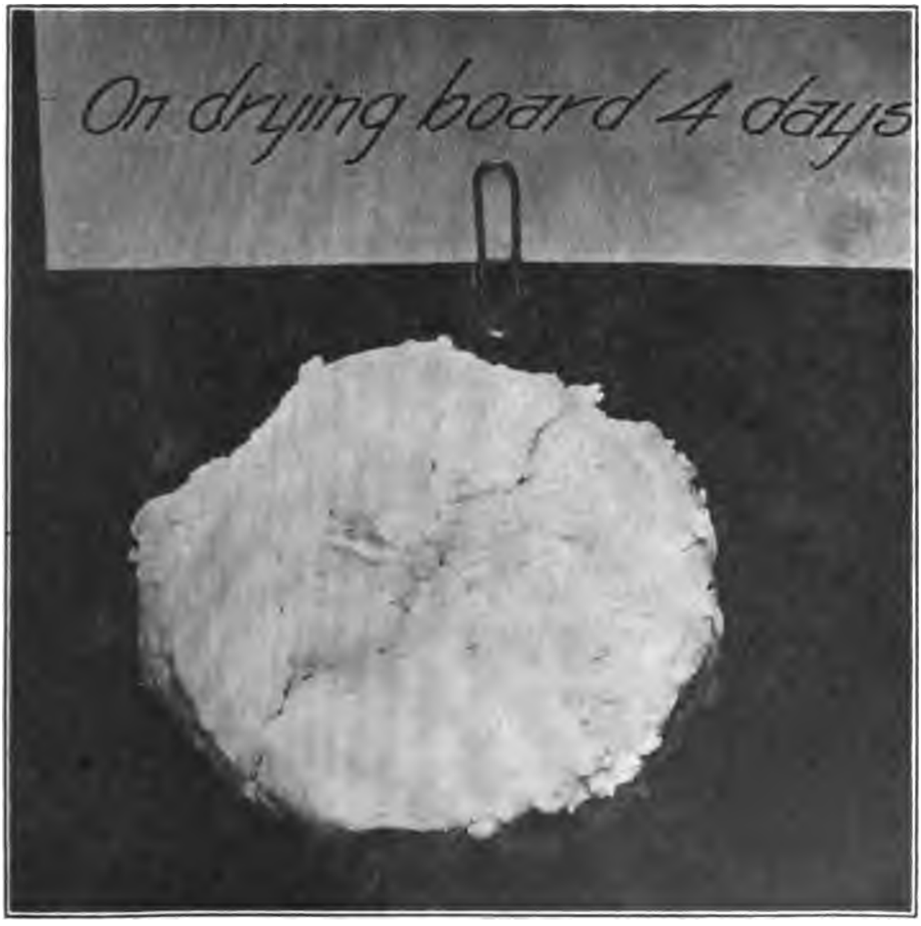

Fig. 4 (a).

causes which tend toward broken balls which the novice will do well to guard against:

1. Too high heat in the clabber state of the milk resulting in too dry a curd caused by a too thorough separation of whey from curd.
2. Insufficient mixing of salt with curd.
3. Too rapid drying of balls.
4. Careless turning of balls.

Toward the close of the drying period a thin grayish blue mold develops on the balls and they become soft on the outside. The balls are then wrapped separately in paper and packed in small boxes and placed in the curing room. A cheddar cheese box answers the purpose very well. Where no separate curing room is available the boxes can be placed on the ground in the cellar. A damp cellar is better for the purpose than a dry one. In the winter it is well to cover the balls in the boxes with burlap to preserve the heat caused in the fermentation process.

The balls need be turned and separted once each week during the curing process, which requires 3 to 4 weeks to complete. The fermentation changes the white curd to a bright straw color. Some people prefer the curd to be entirely fermented, while others prefer about half to two-thirds fermented. After the curd is all fermented a strong odor and flavor develops which is objectionable to most people. It resembles limburger.

Ripening.

Figures 5 (a), (b), (c), and (d) show the development of the ripening process and change of color. The stage of ripeness as illustrated by 5 (c) is preferred, by many, to 5 (d).

When sufficiently ripened, the balls are removed from the boxes and placed in whey for 10 to 12 hours to soak the paper wrapper and outer mold loose. The balls are then partially cleaned and again placed in whey for 6 to 12 hours after which the grayish blue mold is all cleaned off and the balls rinsed in clean water and wrapped in parchment paper. Four balls are usually wrapped together which are sold for 10 cents. The four balls weigh from 10 to 12 ounces when ready for market. Thus the price per pound of cheese would be 13 to 16 cents. One hundred pounds of milk yields 50 to 60 balls, which would net $1.30 to $1.50 per hundred of skim-milk.

DUTCH CHEESE.

Soda Method.

The milk is allowed to clabber as in the natural fermentation method. It is then heated slowly to 85° F., in summer and 90° F. in winter, poured into a thin muslin or crash toweling bag and placed

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in draining box and allowed to drain for 24 hours. No pressure is applied to the curd while draining in this method. The heating obviates the pressure. By heating of the clabbered milk, a more complete separation of the curd and whey is secured; but less cheese per 100 pounds of milk is obtained.

The drained curd is salted to taste, one-third to one-half ounce per pound of curd, thoroughly mixed and made into balls. The drying process is the same as outlined in the natural fermentation method. When sufficiently dried the mold that has formed is scraped off and the balls rubbed with baking-soda. During the winter the mold is not removed before applying the soda. The balls are then wrapped separately with paper (newspaper or soft manilla paper will answer) and allowed to ripen for 3 to 5 days when they are ready to be cleaned for market.

Figures 6 (a) and (b) show the rapid development of the fermentation as compared to the natural fermentation method. It will be noticed that the ball ripened 6 days by the soda method has about the same amount of curd unfermented as the ball ripened 19 days by the natural method. (See p—).

Many people do not like the soda cheese, and it does not bring as large returns for the milk used; however, the soda method has the advantage of taking less time to prepare the cheese for market.

The dairymen using the soda method usually have their balls weigh 3½ to 4 ounces when ready for market. Thus 4 balls which sell for 10 cents would weigh 14 to 16 ounces. The price per pound of cheese is 10 to 12 cents and the value of cheese per hundred pounds of milk is 90 cents to $1.10.

The loss in weight during the drying period is 45 to 50 per cent., the same as in the natural method, while the loss in ripening is usually most in the soda method; it varies from 5 to 10 per cent.

For convenience of comparison, the following table is given:

Amount and value of cheese obtained from 100 lbs. skim-milk.

Variety of Cheese.	Pounds of curd.	Pounds of cheese.	Value.	Cost per pound of cheese.
Cottage,	18 to 20	18 to 20	$0.60 to $0.80	$0.03 to $0.04
Boiled,	10 to 12	12 to 14	.65 to 1.00	.055 to .07
Dutch (Natural Method),	18 to 20	9 to 10	1.30 to 1.50	.13 to .16
Dutch (Soda Method),	15 to 17	8 to 9	.90 to 1.10	.10 to .12

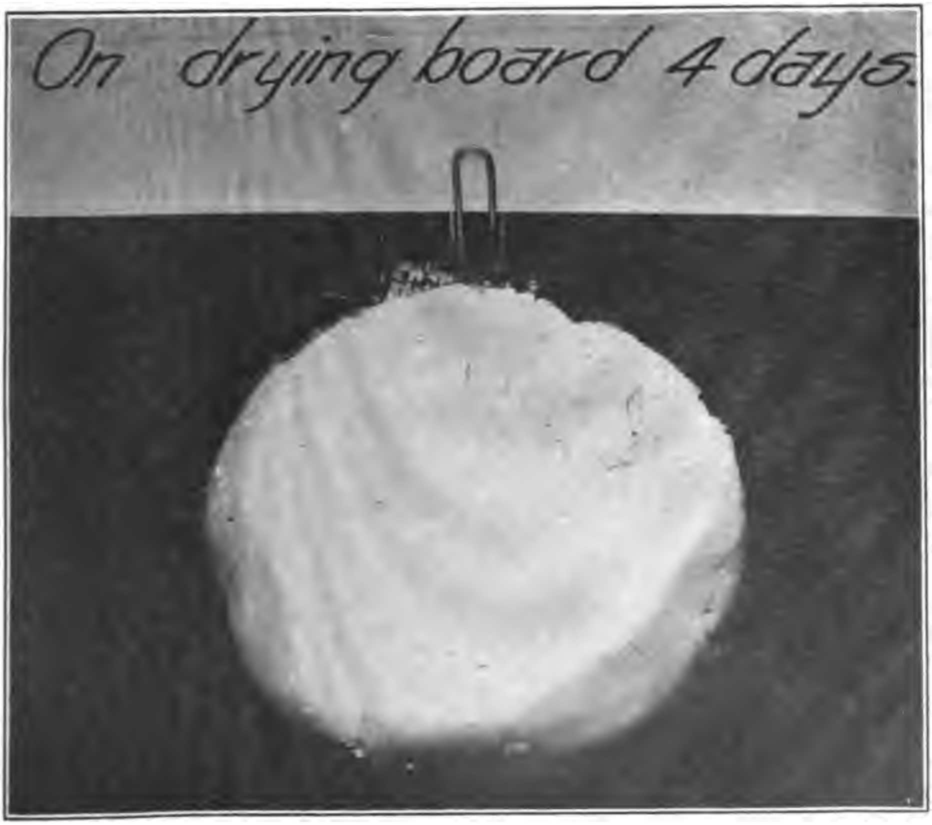

Fig. 4 (b).

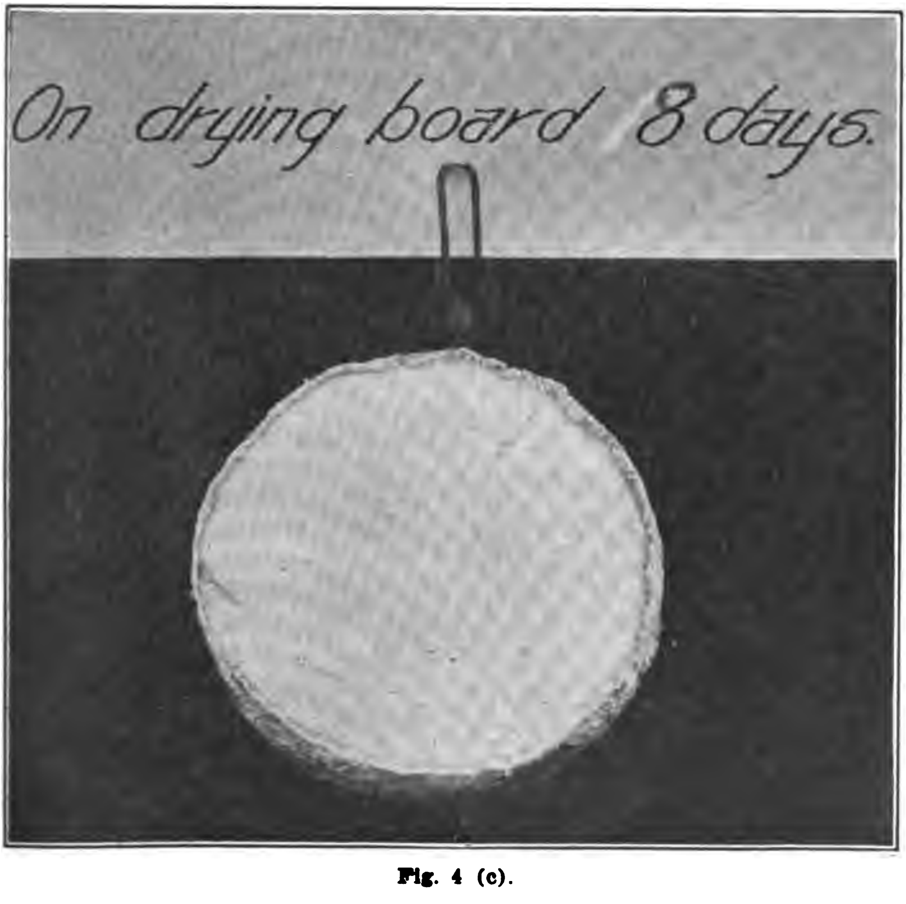

Fig. 4 (c).

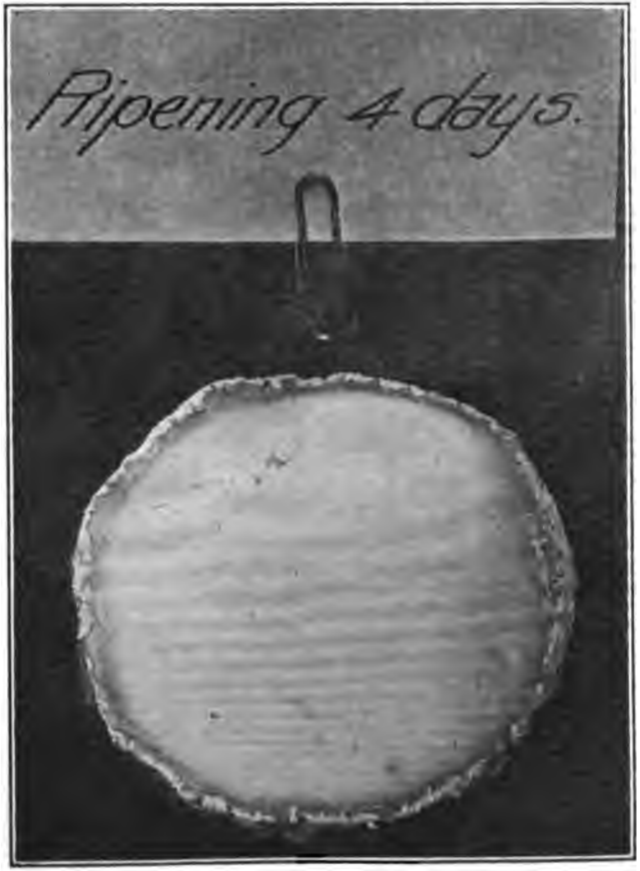

Fig. 5 (a).

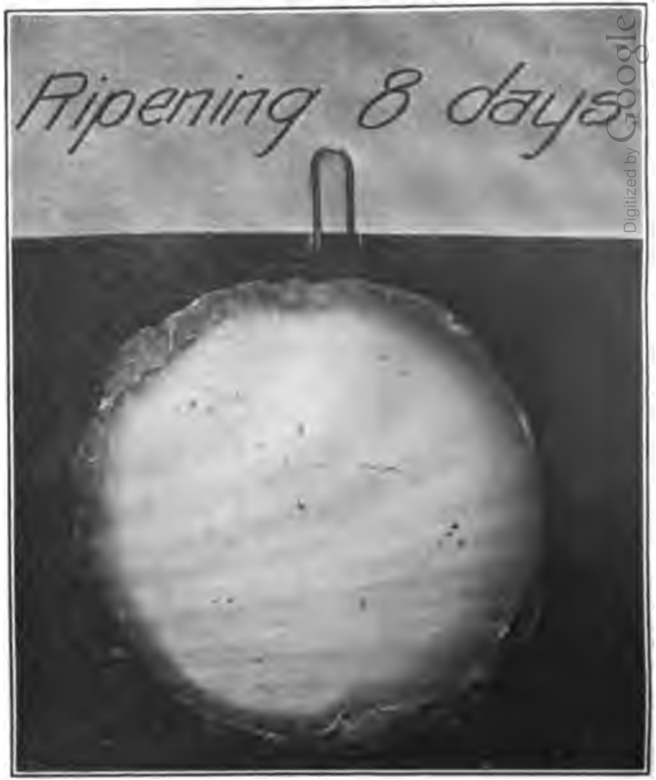

Fig. 5 (b).

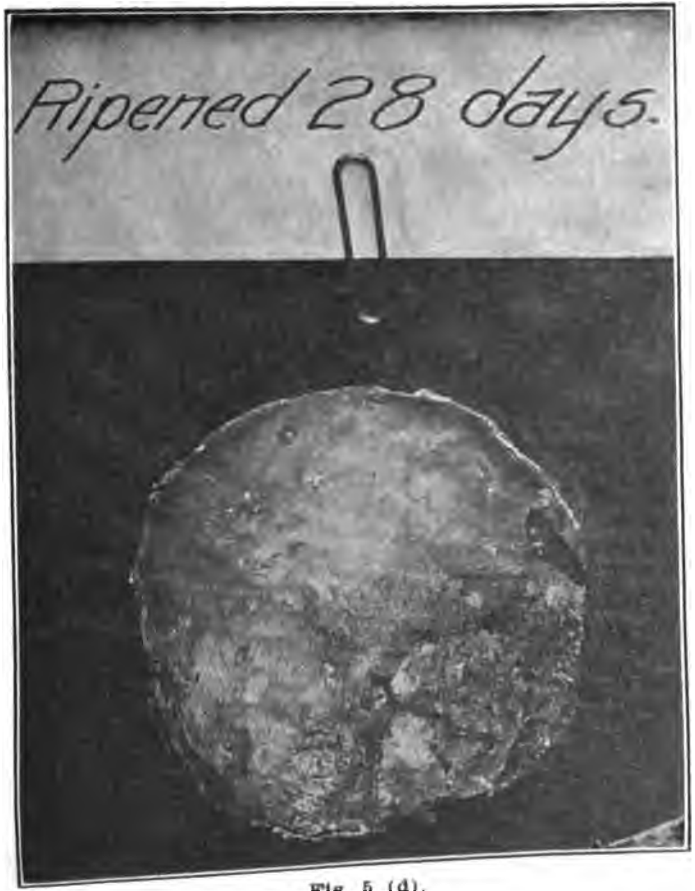

Fig. 5 (d).

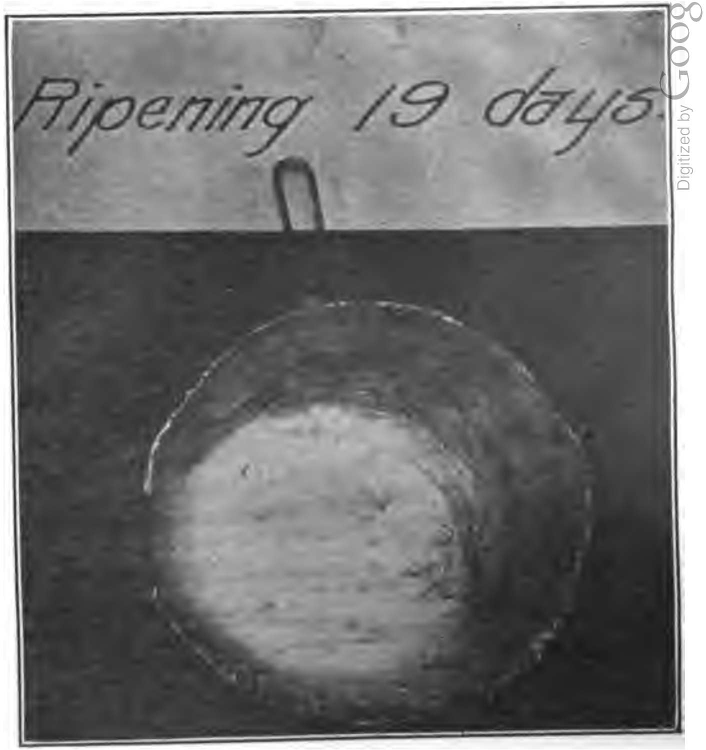

Fig. 5 (c).

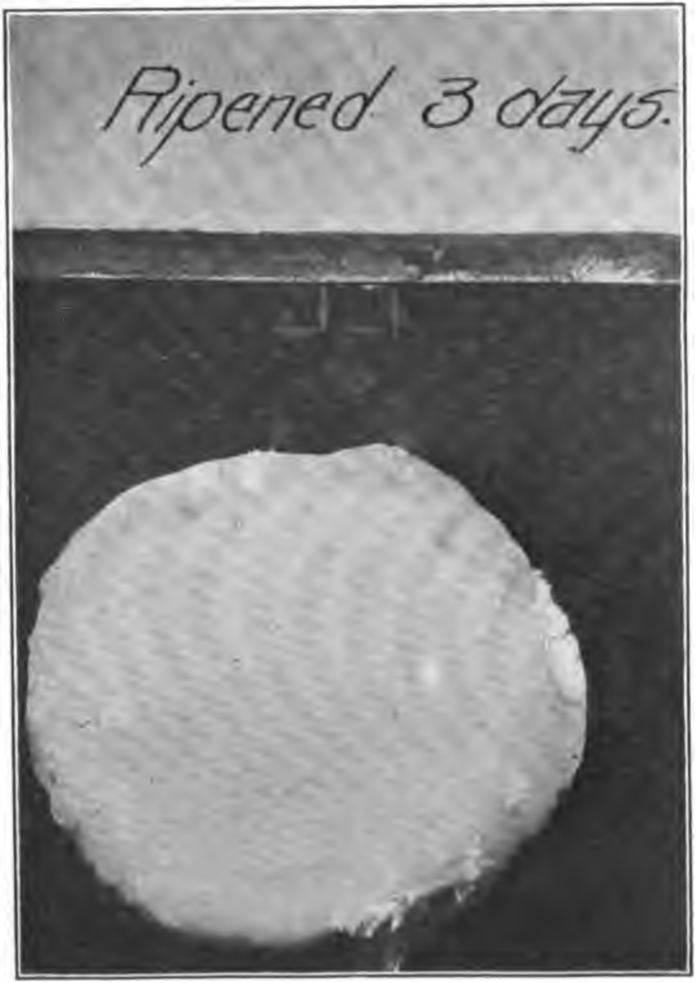

Fig. 6 (a).

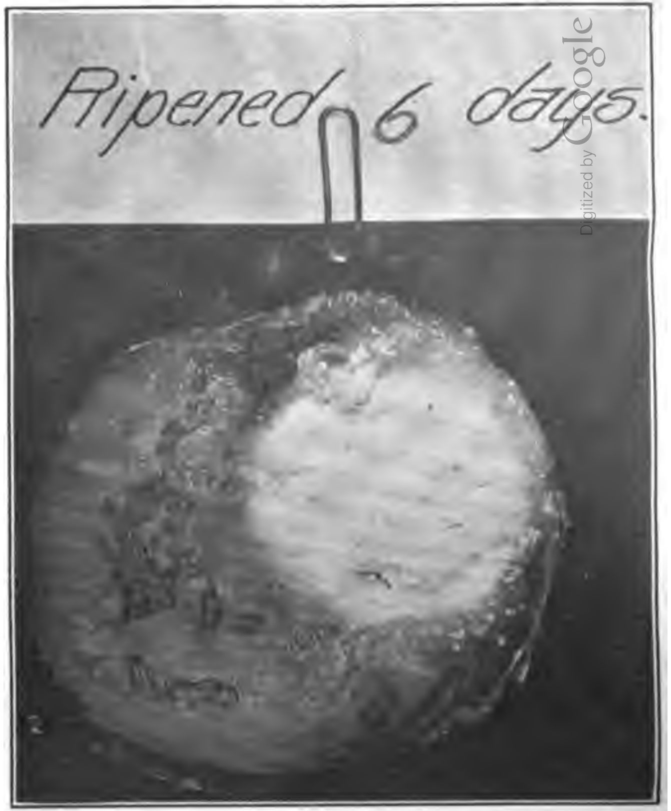

Fig. 6 (b).

EGG CHEESE, CURD CHEESE, EASTER CHEESE, *(Ziegerkase.)*

In the manufacture of egg cheese the method varies in different daries the same as with the other varieties aforementioned. One method is to batter four eggs into one quart of thick skim-milk and pour this mixture into one gallon of boiling sweet milk and continue to boil and stir rapidly for two minutes. The curd is then dipped off with a sieve bottom dipper and placed in perforated tin dish or mold as per Figure No. 7, and the whey allowed to drain off, or the entire mass can be poured into a bag and the whey allowed to drain off for 20 to 30 minutes before the curd is placed in the mold. If put into the mold with all the whey, considerable of the curd is washed out through the perforations of the mold.

Figure 7 (a) is the shape of mold mostly used for the purpose and 7 (b) the cheese as it appears when removed from the mold. The amount of this cheese sold on the Lancaster market is very small as compared with the other three varieties. It is sometimes called Easter cheese as the economical house-wife considers it unprofitable when eggs are selling at 35 to 40 cents per dozen. The cheese can be made without eggs if desired, but is nearly white in color instead of cream yellow when eggs are used. Another method is to mix one pint of whey with or without eggs into one gallon of boiling skim-milk and boil and stir for two or three minutes. The cheese made from the first formula sells for 20 cents.

Allowing 30 cents per dozen for the 4 eggs (10 cents) and $1.25 per hundred for the whole milk (10 cents) there would be no profit in its manufacture. The last formula is much cheaper, but the cheese is not so nutritious and finely flavored.

Commonwealth of Pennsylvania

DEPARTMENT of AGRICULTURE

Bulletin No. 201

Market Gardening,

No. 2.

By

PROF. R. L. WATTS

State College, Pa.

HARRISBURG:
C. E. AUGHINBAUGH, PRINTER TO THE STATE OF PENNSYLVANIA.
1910

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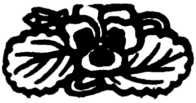

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PREFACE.

Commonwealth of Pennsylvania,
Department of Agriculture,
Harrisburg, Pa., Dec. 5, 1910.

Bulletin No. 147, published by this Department in 1906 met with so much favor that the greatest care possible was required, in its distribution to prevent an exhaustion of the whole number printed, before those most interested in the subjects discussed were supplied.

The fact that the supply of this bulletin was practically exhausted nearly a year ago, and that calls for literature upon the subject of "Market Gardening" continued to come to the Department almost daily, together with the fact that constant progress is being made in the development of new methods and the improvement of methods that have been in common use, led to the conclusion that there is great need for another bulletin upon the same subject. Arrangements were accordingly made with the same author to prepare "Market Gardening, No. 2," which is sent out in the hope that, like its predecessor, it will prove a great help to those who wish to take advantage of the excellent market facilities enjoyed by the vegetable growers of our State.

N. B. CRITCHFIELD,
Secretary of Agriculture.

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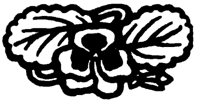
LETTER OF TRANSMITTAL.

State College, Pa., December 1, 1910.

Hon. N. B. Critchfield, Secretary of Agriculture:

Sir: In compliance with your request, I have the honor of submitting to you the manuscript for a bulletin on "Market Gardening." It is gratifying that the first bulletin on this subject, No. 147, published by the Department of Agriculture, and which I had the pleasure to prepare, has found a place among the farmers and vegetable growers of the State. It is hoped that the second bulletin, which is more comprehensive and better illustrated, will meet the needs of every soil tiller in Pennsylvania who desires to increase profits by the production of high grade vegetables. The instructions are based upon many years of practical experience as well as careful study of the most important market gardening sections of the East.

Yours respectfully,
R. L. WATTS.



MARKET GARDENING.

PENNSYLVANIA MARKETS.

No state in the Union possesses better markets than Pennsylvania. The two largest cities, Philadelphia and Pittsburg, require enormous quantities of vegetables to feed their millions of people. The smaller cities as Harrisburg, Lancaster, Altoona, Johnstown, Reading, Allentown, York, Erie, Greensburg, New Castle, and Uniontown are most excellent markets. Then, there are scores of towns ranging in population from a thousand to ten or more thousand that furnish local markets for a limited supply of produce. The prices are generally satisfactory. There are gluts, of course, which cause low prices for brief periods, but average prices are unquestionably higher than in most states. It is a lamentable fact, however, that the bulk of the vegetables consumed in Pennsylvania is supplied by other states. Thousands of carloads of cabbage, tomatoes, celery, lettuce, asparagus, melons, onions and a long list of vegetables are annually supplied to our markets. Without a tremendous increase in the area of glass, the State could not produce sufficient vegetables for the early spring markets, although there are splendid opportunities for the forcing of greenhouse crops. There can be no doubt about the possibility and desirability of our farmers producing practically all of the vegetables required by our markets so far as climatic conditions will permit.

It is hoped that this bulletin will suggest to many farmers a closer study of their local markets. For example, Where do the onions come from? What prices do they command? Could you grow them successfully on your own farm and would their culture increase your annual profits? A similar investigation might be made of other vegetables for which there is a local demand. There are opportunities in almost every community. It may be the planting of large areas in special crops, or more likely the devoting of small areas to a number of crops. Other lines of farming should not be dropped or reduced until the new lines have been thoroughly tested and found to be more profitable.

LOCATION.

If the farm is to be devoted largely or exclusively to market gardening or trucking, too much care cannot be exercised in choosing a location. A number of factors should be taken into account.

Close proximity to a large city has many advantages. Among them may be mentioned the following: (1) Less difficulty in procuring the necessary labor. This is often a serious matter, and yet the problem is readily solved by those operating on a large scale. Special cottages or boarding houses are often provided and the plan, when properly managed, is highly satisfactory. (2) It is a great advantage to be near large supplies of manure. When stables are cleaned regularly by gardeners the manure is often procured without charge and the prices are seldom more than fifty cents per load of from one to three tons. This makes cheap fertility, although the expense of hauling is quite an item. (3) A short haul to market makes a light expense for this work, while it is heavy for gardeners living remote from markets. (4) A short distance from the city enables the gardener to wagon his produce which is a most decided advantage over shipping. It also enables him to place his produce on the market in the most perfect condition. (5) When near the city the producer gets into closer personal touch with the market and is better posted concerning prices.

It is also important to study the character of the market before deciding upon the location. Prices range higher in some markets of this State than in others. The methods of selling also vary. A central wholesale market where all retailers and hucksters gather to procure their supplies—is, doubtless, the most satisfactory plan from the standpoint of the producer.

Good roads are of primary importance to the market gardener. He can well afford to pay considerably more for a farm located on a smooth, hard, well drained road with easy grades.

Irrigation plays a more important part in market gardening every year. Overhead systems of watering are rapidly becoming popular and it is highly desirable to locate near a constant supply of water which can be obtained and supplied at a minimum cost.

If remote from market, good shipping facilities are important. Two lines of railways, operated by different companies, help to secure better service. It is important to have ready access to several towns or cities.

Sandy loams are ideal for garden purposes. They are easily worked and well adapted to a general line of cropping. Southern or southeastern exposures are desirable if earliness is an important factor. Natural windbreaks of hills or trees assist in producing early vegetables.

SOILS.

It was stated in the preceding paragraph that sandy loams are ideal for a general line of gardening. This fact is universally recognized. Such soils are of easy tillage and well adapted to a great variety of crops. The large percentage of sand makes them early, while at the same time there is usually sufficient body to make them quite retentive of moisture and fertility. Sand is especially important in the growing of root crops. In soils contain- much clay the roots of such crops, as the parsnip and salsify, will be rough, crooked and probably short. The sandy types always produce the smoothest and most uniform beets, turnips, radishes, parsnips and all other root crops.

The area of sandy soils in Pennsylvania is limited compared with that of the heavier types. This should cause no special concern, for vegetables of the finest quality are grown in every county of the State. The heavier types are well adapted to many vegetables, as cabbage, cauliflower, sweet corn, tomatoes and peppers, while with proper additions of humus-making material all of the vegetables, if climatic conditions are favorable, may be grown with success.

The most undesirable types are the stony soils which are difficult to work and the gravelly soils in which crops usually suffer from drouth. If market conditions are especially favorable it may be profitable to spend considerable money in improving the most undesirable soils.

Reclaimed swamps or muck soils are especially desirable for celery, lettuce and onions. There are various areas of muck land in Pennsylvania, as in Tioga county, on which these vegetables are grown on a large scale.

Thorough drainage is a matter of primary importance. No soil, unless well drained naturally or artificially, will yield satisfactory garden crops.

EQUIPMENT FOR RAISING EARLY VEGETABLE PLANTS.

The kitchen window is a favorite place on many farms for starting early vegetables. It may serve the purpose fairly well if a small number of plants are wanted. Ordinarily, however, plants are too much crowded in windows and they are not generally transplanted until drawn, pale and tender, and plants of this character are not satisfactory. Millions of plants are started in hotbeds and this will always be the favorite plan of most growers. Market gardeners, operating on quite an extensive scale, prefer greenhouses, and there are many arguments in favor of them. The kitchen window, hotbed and greenhouse are used to nurse the plants for a period of three to six weeks and cold frames are then employed in caring for the plants until set in the field.

In addition to the above equipment, provision should be made for mats to protect the plant in hotbeds and frames during cold weather unless these structures are heated by steam or hot water. A

It is not necessary to build very large houses unless the forcing of vegetables or flowers is contemplated. A house 30 x 75 feet will serve the purpose for twenty-five to fifty acres of vegetables. If the grower is skillful and can combine vegetable forcing with open ground work, he might be able to use to advantage an acre or more of glass, provided market conditions are favorable. The size of the greenhouse must also be determined by the number of available sash for cold frames. If the plants are merely held in the beds until the first transplanting the house need not be large. At least eight hundred seedlings should be started on every square foot of bed or bench space, if they are to be transplanted in about four weeks.

GREENHOUSE CONSTRUCTION.

Greenhouses may readily be built by local carpenters. It is important, however, for the gardener to make a careful study of the whole subject before buying materials or undertaking the work of construction. "Greenhouse Construction," by Professor L. R. Taft, is the only complete book on the subject. It may be procured through any well known publishing house. The catalogs issued by the various building firms are also instructive. The prospective builder should visit and study well built houses to become familiar with details which enter into the construction of all classes of greenhouses. It is not the purpose of this chapter to discuss the details of greenhouse construction, but a few suggestions may be helpful to inexperienced builders.

The location is important. The house should be protected, if possible, from hard northern or western winds. It should be comparatively near the dwelling and convenient to the cold frames. The water supply must also be considered in locating the greenhouse.

There are various forms of greenhouses; the lean-to, hillside, three-quarter span and even span. Of these types, the even span, as shown in Figure 1, is the most popular although there are hundreds of three-quarter span houses. Definite experiments show that none of these types has any superiority over the others. It is largely a matter of preference, although the three-quarter span houses are better adapted to hillsides unless the ground is first graded. Houses which run northeast and southwest are satisfactory, although the position of the house with reference to the rays of the sun at different periods of the day is a matter of little consequence.

It always pays to use the best materials and to buy from reliable builders. The wood parts should be well air-dried cedar or cypress. A number of well known firms make a specialty of sash bars and all other wood parts which are cut, when possible, in the proper lengths at the factory thus making the carpenter work a simple matter.

Full iron frame construction is on the increase, but the cost of building is so much greater than semi-iron construction that the latter plan is preferred by most growers. All wood parts should be given two coats of paint before glazing and a third coat after the glass is laid. It is economy to build houses which are not less than thirty feet wide. The roof should not be too flat or too steeep. Most houses are built with a pitch of thirty to thirty-five degrees. The posts or walls should be durable. Formerly, wooden posts were used exclusively. They are seldom used now, for iron pipe posts and concrete walls have been substituted. Pipe purlins and interior posts and braces are also in common use. The King form of construction obviates the use of interior supports.

It is desirable to use double strength A glass. Cheaper grades break more frequently by the freezing of water under the laps and the loss caused by large hail-storms would be much greater. The freedom from blemishes is also an advantage. Sixteen by twenty-four inch glass is used the most extensively, although larger sizes are frequently used. Some houses are built with the sash bars twenty-four inches apart while the majority of builders object to more than twenty inches between sash bars. At this distance, glass either twenty by twenty-four, or twenty by thirty, may be used. To secure the best glazing, the glass should be laid in putty with the convex side up and care exercised in grading glass so that the laps, which should not be more than one-fourth inch, fit tightly. A number of good glazing points are on the market. The Peerless is one of the best.

Raised benches are rapidly passing out of use. Their cost of construction and maintenance is in itself a serious objection. The main reason for their abandonment, however, is that in the forcing of all classes of vegetables, better results are obtained in solid beds. Cement sides, about three inches thick and a foot high, are often used to the solid beds but even these are not considered an advantage in most successful commercial establishments. It means, then, that the entire area of the greenhouse is one plat to be farmed in a most intensive manner without the interference of benches, pipes, concrete sides of beds or concrete walks. Large doors are often provided at the ends of the houses so that teams and wagons can pass in and out with soil and manure. Plows and harrows may be used almost as freely as in the open. Alleys or walks are provided as may be necessary. (See Figure 2.) All heating pipes are along the sides or overhead. It is by far the most economical arrangement, and experience teaches that it is entirely satisfactory. Raised benches are convenient for certain lines of work, but from a business point of view they receive the support of a very small per cent. of our vegetable growers.

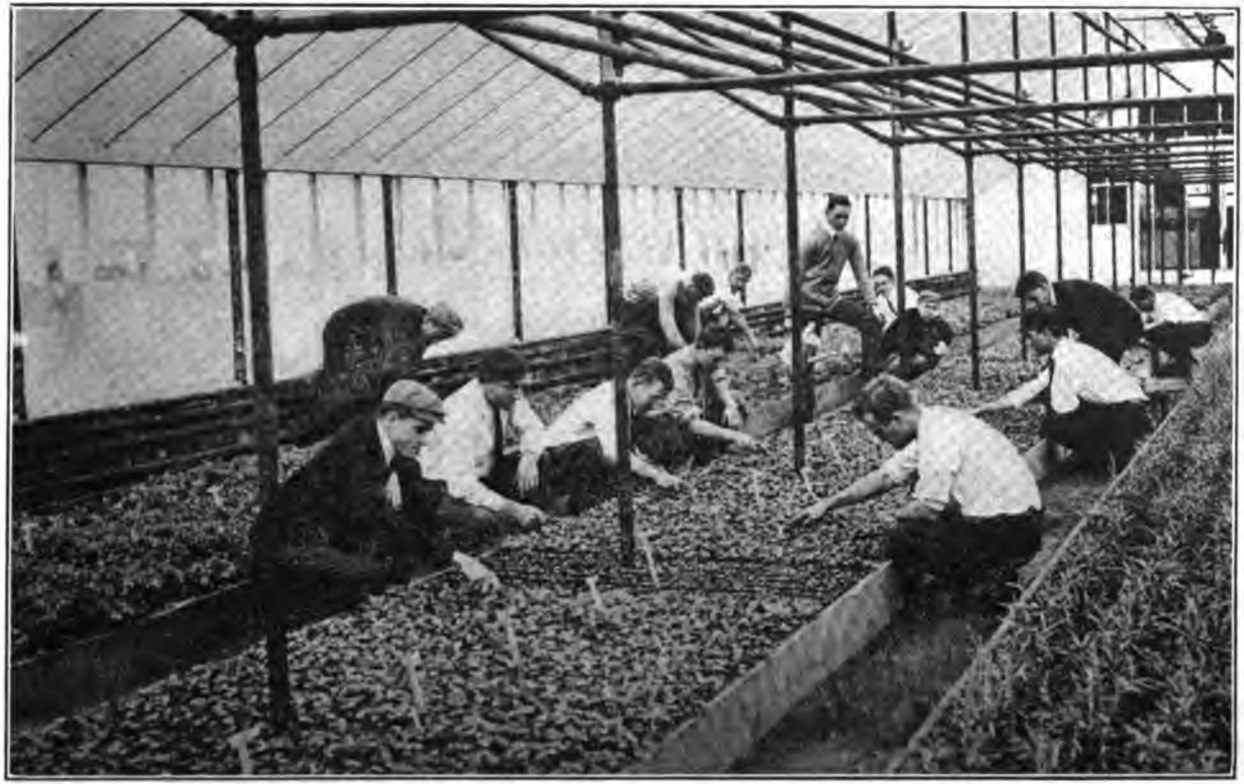


Fig. 2. A convenient house at the Pennsylvania State College. All heating pipes are along the side or overhead.

Both steam and hot water are extensively used in greenhouse heating. Each system has its staunch friends. It costs more money to install a hot water system, but it is more economical to operate and the pipes when kept filled with water are more permanent. With hot water, the boiler may be left for a longer period at night without attention because the pipes when filled with circulating warm water retain heat much longer than steam. Hot water, therefore, is much more desirable for small houses than steam because the gardener can get along without a night fireman. Whatever the system, it is important that a boiler and radiating surface of pipes be adequate to maintain the proper temperatures in the coldest weather. With a first-class hot water system, it is possible to leave the boilers for seven or eight hours even at zero temperatures outside.

No greenhouse plant is complete without a good potting or transplanting room. It is often convenient to have this room over the boiler room or adjacent to it. See that it is properly heated, ventilated, lighted and well provided with good work tables or benches. This room should be made pleasant and comfortable to secure the best service of the workmen.

SASH FOR HOTBEDS AND COLD FRAMES.

In the purchase of sash, it is economy to buy the best material. Well cured cedar or cypress should be used, although white pine is considered just as durable by some who have had many years of experience in the management of frames. A prominent gardener of Philadelphia county is using quite a number of white pine sash which were bought at least twenty-five years ago and they are still in good condition. Cedar or cypress, however, are generally used.

Sash differ greatly in style of construction. A bracing rod in the middle is highly desirable, but many firms do not use it. The joints should always be leaded and the lumber smoothly dressed. The standard size is three by six feet, although larger ones are used extensively in Philadelphia county. They also vary in thickness from one and three-eighths to two inches. The lighter sash are easier to handle but less durable and more likely to be lifted and broken by the wind.

In glazing sash either of these two methods is used, to butt the glass which slides in grooves, or to lap the glass which is the more popular plan. There is greater leakage when glass is butted and the sash is probably not so durable with the open grooves which collect and retain moisture. Ten by twelve inch glass is almost universally used in the three by six foot sash. Smaller lights are in common use on the larger sash, but there are serious objections to small panes. It is true, that in case of breakage, the cost of repair is less, but sash are much more tedious to glaze when the lights are so small and the additional bars and extra laps materially reduce the amount of light that can enter the frames.

Sash should be given two coats of paint before glazing and one after. They should also be painted every other year and stored in the dry or stacked when not in use.

DOUBLE GLASS SASH.

Two firms at least are placing on the market double glass sash, and many gardeners desire information regarding their merits as compared with single glass sash. Double sash are made thicker so it is possible to provide a more or less dead air space between the two layers of glass.

The advantages are as follows: (1) Plants are afforded almost, if not altogether as thorough protection as with single glass covered with mats. It is possible, however, that single glass sash and new rye straw mats will give better protection during severe weather. In many parts of the country double sash should give all the protection needed by plants ordinarily grown in frames. (2) The labor bill in the management of frames is reduced because there are no mats to be handled morning and evening. (3) The plants receive the light during the entire day because there are no mats at any time to obstruct the light. (4) A growing temperature is reached earlier in the day and is maintained longer unless there is little or no sunshine.

The following disadvantages may be stated: (1) Double glass sash cost at least one-third more than single. (2) They are much heavier to handle but will be broken less by the wind lifting them. (3) They may not be so durable. Some growers claim that the condensation of moisture between the glass will shorten the life of the sash. It is held by some that this moisture and the accumulation of dirt between the glass reduces the amount of light entering the frames, and thus weaker plants result. There is a place in gardening for double sash, although the cheaper and lighter single form with mat protection when necessary will doubtless continue to be popular in most sections.

MAKING HOTBEDS.

In the absence of greenhouses, hotbeds are necessary to start early vegetable plants. They are heated in various ways, sometimes by flues running the length of the frames a few inches or perhaps a foot or more under the surface of the ground. Steam from farm boilers is also quite a satisfactory method when it is forced through drain or sewer tile placed a few inches below the surface of the soil in the frames. Steam or hot water may also be used, as in the heating of greenhouses, and this method is unquestionably the most

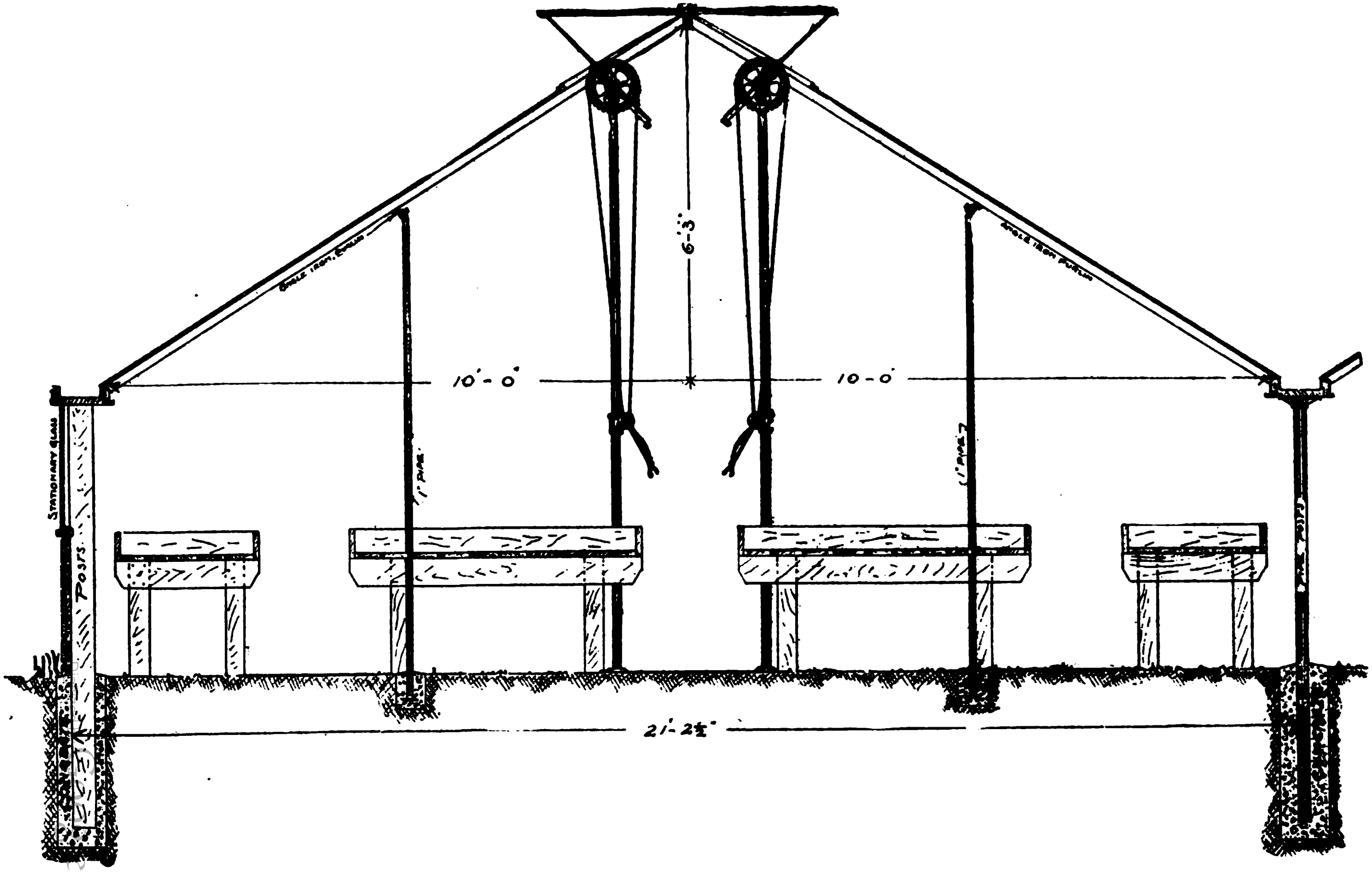


Fig. 1. Cross Section of a 20-foot Even Span House.

satisfactory when it can be employed. The use of fermenting manure, however, is the plan which is most common.

The hotbed should be near a building which can be made warm and comfortable for seed sowing and transplanting. It should have natural or artificial protection from hard winds and convenient to the supply of water. A southern or southeastern aspect is essential in order to get the full benefit of the sun.

If the land is poorly drained the manure may be placed on the surface of the ground, resting the frame on the flattened area, and banking with manure on the outside. A very much better plan is to dig a pit of sufficient depth to hold the manure. This work should be attended to in the fall before the ground is frozen. It should be of the same width and length as the frame to be constructed. Its depth will depend upon a number of conditions. Twenty-four inches is ample for most purposes in all parts of this State. Eighteen inches would do for the southern part of the State. If heat is wanted for a longer time than usual in the starting of early plants in the spring, then the depth of the pit should be greater and the quantity of manure increased.

Concrete may be used for the sides and ends of the frame. It need not be more than three inches thick and should extend from the bottom of the pit to the height desired. This form of construction is somewhat more expensive than when lumber is used, but the desirability of such a frame renders it the most economical in the end. Wood of a durable character, as chestnut, should be used if the frame is made of lumber. Wooden frames are often made in sections to accommodate three or four sash and then the sash may be stored when not in use. Sometimes the corners are mortised, or pinned so that the frames may be taken apart quickly and the separate parts stored in small space. Two by three cross bars are convenient in the handling of sash, although some gardeners do not go to this additional expense. If the location is level the north side of the frame should be about twelve inches above the ground and the south side about six inches. The boards, which should be not less than one and one-fourth inches thick, should be nailed to stakes or posts on the outside of the frames.

Fresh horse manure is by far the best material for filling the pit. Leaves and other kinds of manure may be mixed with the horse manure but this is seldom done. Shaving manure is unsatisfactory. The horse manure should be by volume about two-thirds solid excrement or fine material and one-third straw. The heat is violent and of short duration if the manure contains insufficient straw, and if it contains too much it may fail to ferment properly and to give the required heat.

If the manure is saved from a few horses it should be kept under cover and spread thinly to prevent fire fanging. When hauled from livery stables or saved in the home barn, stack in piles ten days to two weeks before you desire the use of the hotbed. These piles should be not more than five feet wide and four feet high and as long as may be convenient. The manure should be tramped quite firmly as the pile is built and it is very much better to do this work under cover unless it will be protected from rain and snow. In about three or four days fermentation should be well under way and the interior of the pile quite hot. The manure should then be restacked in the same manner, placing the outside of the first pile in the interior of the second. In about two days the entire pile should show vigorous fermentation and the manure should then be hauled to the pit. If dug in the fall, coarse manure or leaves should be thrown over the bottom to prevent freezing. After removing this throw in the manure in layers, firmly tramping each layer, until the manure, which is kept level, is within a few inches of the top of the frame at the south side. A thermometer is then plunged into the manure and the sash placed on the frames. If good manure has been properly prepared the temperature will rise very rapidly to 120° or more, but it is not safe to sow seed until it drops to 90°. If seed is to be sown directly in the frame not less than four inches of soil should be placed on the manure. If flats are used, two inches of soil will be sufficient to absorb the steam or odors that may rise from the manure. Figure 3 shows a typical hotbed.

MAKING COLD FRAMES.

A cold frame, in the strict sense of the word, is never heated in any artificial way,, although many frames are heated by steam or hot water conducted in iron pipes. When steam is used a single coil of one to one and one-half inch pipe secured to the sides of the frame will provide ample heat for most purposes. The more common practice is to construct the frame on ground which has been graded level and not use any means of artificial heating. The usual slope to the south of six inches is provided and the frames banked to the top with manure, sods or soil. Concrete may also be used for the sides and ends of the frames. Cross bars are also convenient in the management of the frames. The sash bars may be fitted in the frames without nailing and then they are easily removed if the frame is wanted for summer crops. (See Figures 4 and 5.)

Cold frames should be located near the building where the transplanting is done if flats are used. If the land is not too valuable, at least ten feet of space should be allowed between frames to take care of snow when shoveled from the frames, also for the manipulation of sash and mats and for driveways. Near the large cities

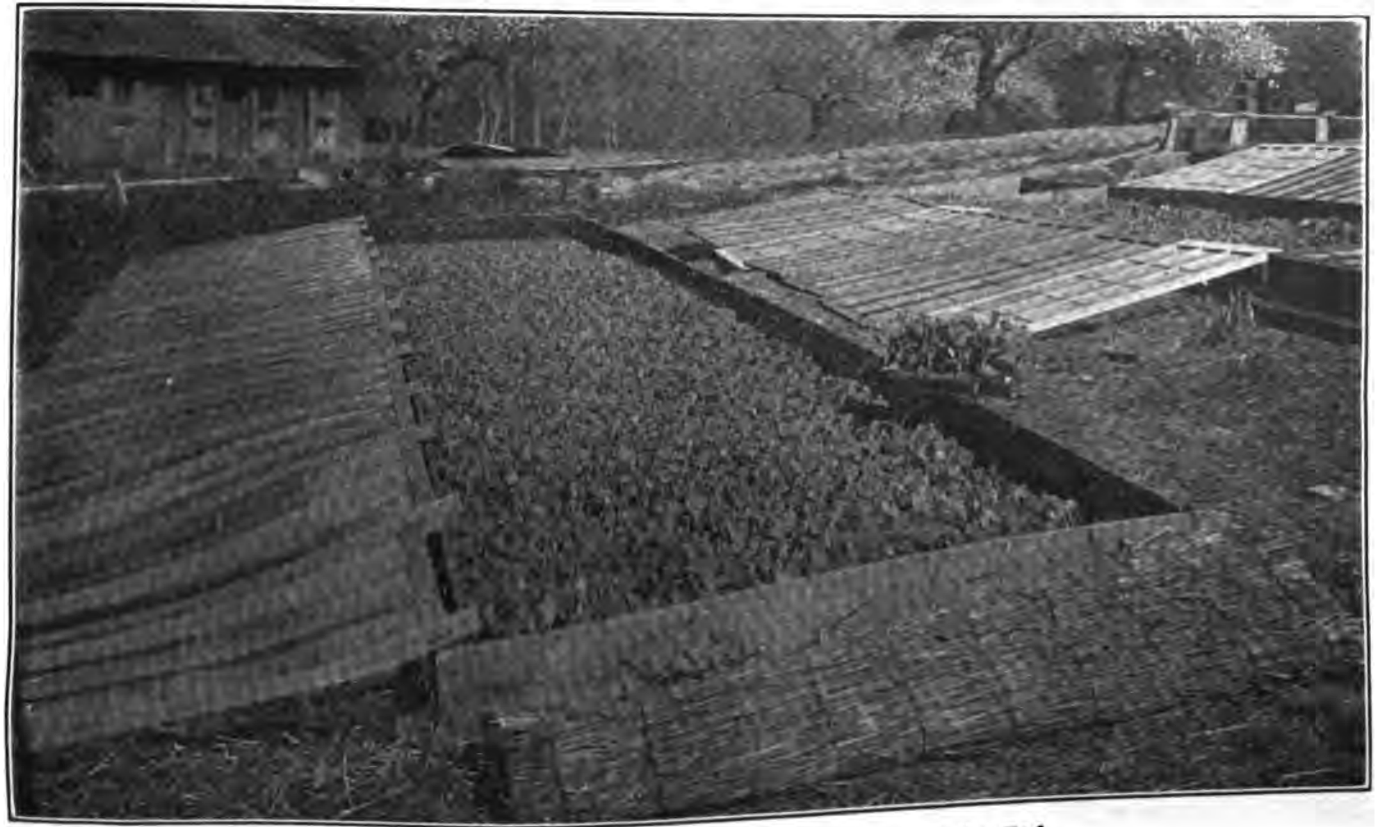


Fig. 4. Cold Frame of Cabbage Plants. Straw Mat at the End.

where land is very high priced, alley ways range from two to three feet in width as shown in Figure 5. These narrow paths prohibit the removal of sash unless they are carried to the ends of the frames.

USES OF HOTBEDS.

In market gardening, hotbeds are used most largely in the starting of early vegetable plants to be transplanted in the cold frame after they are three to five weeks old. Certain classes of plants, as tomatoes, cucumbers and muskmelons are started in hotbeds and then transplanted in the field when weather conditions are right, without the intervention of cold frames. Hotbeds are extensively used about many of the large cities in the forcing of vegetables for market. They may be operated during the entire winter, although the fall and spring seasons furnish best conditions for their management. It is a bothersome method compared with greenhouse culture, but with skillful management gives fair returns. A great many farmers are cultivating rented land and they do not care to spend money for greenhouses when they may be compelled to abandon their places the next year. If the land is worth $1000 or more per acre and the gardener has only a few acres he may operate hotbeds all winter and use the same ground for summer crops.

If the hotbed is used merely for starting early plants in February or March, it is easily possible to follow with radishes or lettuce which will be ready for market when prices are usually satisfactory. Or, the same space may be used as cold frames for forwarding various kinds of plants preparatory to setting in the field. Another use for the spent hotbed, is to grow cucurbits as cucumbers and muskmelons, or tomatoes, maturing these crops early in the summer after the sash have been removed and stored or stacked. Some gardeners find hotbeds very profitable in forcing rhubarb which may be done at any time after the roots are fully matured in the fall. This crop is sometimes forced on a very large scale in hotbeds.

THE USES OF COLD FRAMES.

The cold frame has two distinct uses, namely, the protection of plants during cold weather and the forcing of plants or crops. An example of the first is the protection of cabbage or cauliflower plants from about the middle of October until conditions are right for planting in the open the next spring. Pansies, violets and other ornamental plants are often protected in cold frames during the winter. The cold frame is also very serviceable in rooting bulbous plants wanted for flowering at any time during the winter or spring.

The more common use of cold frames is to care for cabbage, cauliflower, lettuce, tomatoes and other plants after they have been transplanted from the kitchen window, hotbed or greenhouse. (See Figure 4.) Some gardeners grow a million or more plants by this method. It is also a fairly common practice to sow seed of the vegetables just named in the cold frame, transplanting directly to the field. It is always better, however, to transplant at least once before setting in the field.

Cold frames are largely used in forcing lettuce and radishes in the spring and fall. If a few steam or hot water pipes are provided they may be used all winter although greenhouses are much better for midwinter work. Cold frames may be used in maturing cucumbers, muskmelons, watermelons and all other vegetables which command better prices when matured earlier than is possible without glass. The cold frame plat should be cultivated during the entire summer. If cross bars are used they may be removed and also the end boards, and crops grown in the frames as well as between them. Figure 5 shows how frames are handled in most of the gardens in Philadelphia county. This is a much better plan than to allow them to grow up with weeds, thus harboring field mice and other pests and making the place unattractive.

FLATS OR PLANT BOXES.

Seeds may be sown or plants set directly in the soil of the hotbed, cold frame or greenhouse, but for many purposes and for many reasons it is desirable to use flats or shallow plant boxes.

The advantages of flats are as follows: (1) Inclement weather cannot interfere with the work because sowing or transplanting may be done in a comfortable room, carrying or hauling the boxes to the hotbed or cold frame. (2) The comfort of doing the work in a warm, well lighted room is an important consideration. Because of this comfort the work will be done better and more rapidly than is possible when bending over a frame. (3) There is better control of soil moisture in flats although more attention is required. Better plants can be grown in flats than without them. (4) Flats are a great convenience in hauling plants to the field. The boxes are well watered the evening before transplanting and then the wagon is driven between the frames, flats of plants loaded, hauled to the field and distributed along the rows. This is a great advantage over lifting the plants from solid beds. (5) In shipping or selling plants locally the flats possess advantages. They may be crated or simply loaded on the wagon of the purchaser, the flats being returned if desired. If the plants are retailed at local markets flats are indispensable. It is then possible to make sales two weeks or more before the plants are actually needed, for the purchaser knows that he can easily water and care for the plants until he is ready to set them in the garden. Merchants can also buy in dozen lots, keep the boxes watered and retail as desired. In removal of plants at the time of

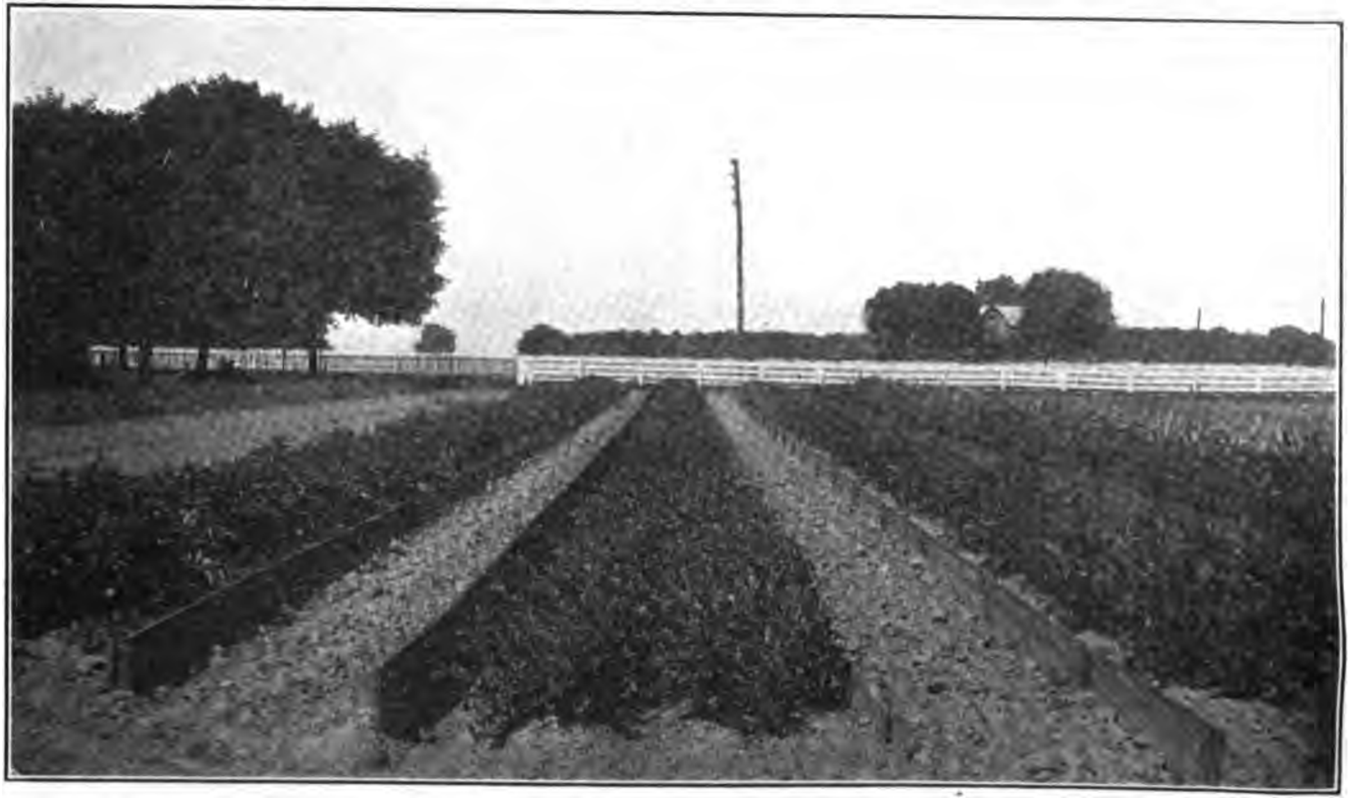


Fig. 5. Potatoes in Cold Frames. End Boards Removed.

setting a block of soil or composted manure may easily be retained on each plant, as shown in Figure 6. This is a most decided advantage for the plant will scarcely wilt when set in the ground. Growth proceeds with little interruption, making it possible to reach the market several days or a week earlier than if the ground is stripped from the roots.

A great many flats are made from empty store goods boxes. This is an economical plan and quite satisfactory. It is usually better to buy chestnut or other durable wood although at present prices flats from new lumber cost more than most gardeners are willing or can afford to pay. Whatever the lumber used, the bottoms and sides should be of half-inch stuff while the end pieces should be not less than three-fourths of an inch. If the flats are only ten or twelve inches in size, which are sometimes used for the retail trade, thinner lumber may be used for all the parts.

In the making of flats, it is seldom desirable to have a greater depth than two inches. Deep flats increase the cost of making them require more soil and manure in filling and make heavier work in handling. A fourteen-year-old boy can easily carry quite a large flat two inches deep while he would find difficulty in handling filled flats three or four inches deep. Deep flats require less attention in watering, but this is the only argument in their favor.

A very common size of flats is about 16x22 inches. They should run uniform in dimensions and be made to fit on the greenhouse bench, in the frames and market wagon without loss of space. It pays to figure out this matter very carefully. It is never desirable to have the boxes longer than two feet. While flats are convenient for most purposes in growing plants they can often be dispensed with to advantage in greenhouse work.

POTS.

When plants are grown in flats there is necessarily some check in growth when they are set in the field. To avoid this loss of time the earliest plants are often set in pots and sometimes shifted once or twice to larger pots before setting in the field. The practice is increasing and is well worth the consideration of market gardeners.

Earthen flower pots are, of course, the most satisfactory. If well cared for they will last for many years, and it is probably economy in the end to lay in a supply of the best grade pots for this work. In recent years, paper pots have come into use and they are now used quite extensively. Any kind of rather heavy paper may be used in the making of paper pots. Ordinary wrapping paper used by merchants serves the purpose very well. The pots may be made of any convenient size. Figure 7 shows the block used in making paper pots. It is bolted to a board, the paper folded about the block, lapping on the sides over the top of the round end of the bolt and clinched with an upholstering tack. These pots may be made rapidly by children or the work may be done by regular hands in stormy weather. The pots fit together closely without loss of space. Unless the paper is very light it should be removed when the plants are set in the field. The paper need not cost more than ninety cents per thousand for two inch pots. Four inch pots should be used for some purposes as the starting of cucumbers and melons and for tomatoes at the second transplanting.

TRANSPLANTING BOARDS, HOSE AND NOZZLES.

A very useful device in the transplanting of seedlings is the board shown in Figure 8. It will be seen that this board consists of two pieces cleated at the ends. It should be large enough to cover the largest flats that may be in use. The holes should be bored with a three-quarter inch bit. The distance between them should vary with the kind of plants to be set. For cabbage and cauliflower the usual distance is one and one-half inches each way, while two inches is not too much space for tomatoes and lettuce. The edges of the holes on the upper side of the board are slightly beveled to receive the dibber more readily. The dibber is also shown in Figure 7. With this device exactly the same number of plants are set in each box,, and the rows are straight. For instruction on the use of transplanting board see notes on "Raising Early Vegetable Plants," page 23.

Fifty or perhaps one hundred feet of rubber hose is essential to reduce the labor in caring for plants. It should be of the best material and not less than three-fourth inch size. When it becomes worn and begins leaking the defective parts should be cut out and the hose repaired with the brass mender shown in Figure 9. This requires but a few minutes and that part of the hose is then absolutely water tight. When the hose becomes so worn that it is not worth repairing the menders may be cut out and used again. Figure 9 illustrates two nozzles which are exceedingly valuable in watering plants. The square form with the bent neck has some advantages over the round nozzle. If the discharge is not free enough the holes may be enlarged with an awl or the point of a file.

MATS.

Early vegetable plants are often started in hotbeds about the first of February and transplanted in the cold frame about the first of March. At this season of the year severe weather would be certain to destroy plants were they not protected at night with mats, unless the frames were heated as previously explained.

Various kind of mats are on the market, as burlap stuffed with waste cotton or wool materials, canvass mats or rye straw. The first mat named is difficult to handle and to keep on the frames in windy

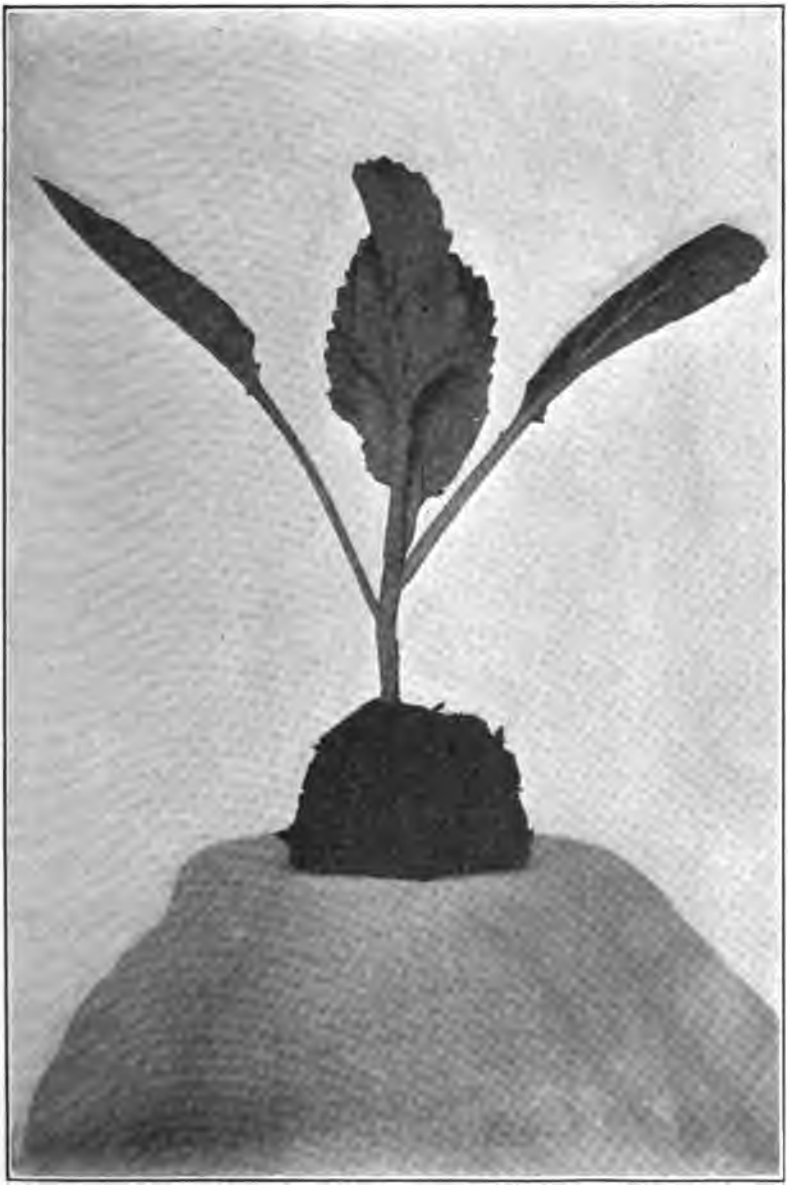


Fig. 6. Plant Removed from Plat with Soil Attached to Roots.

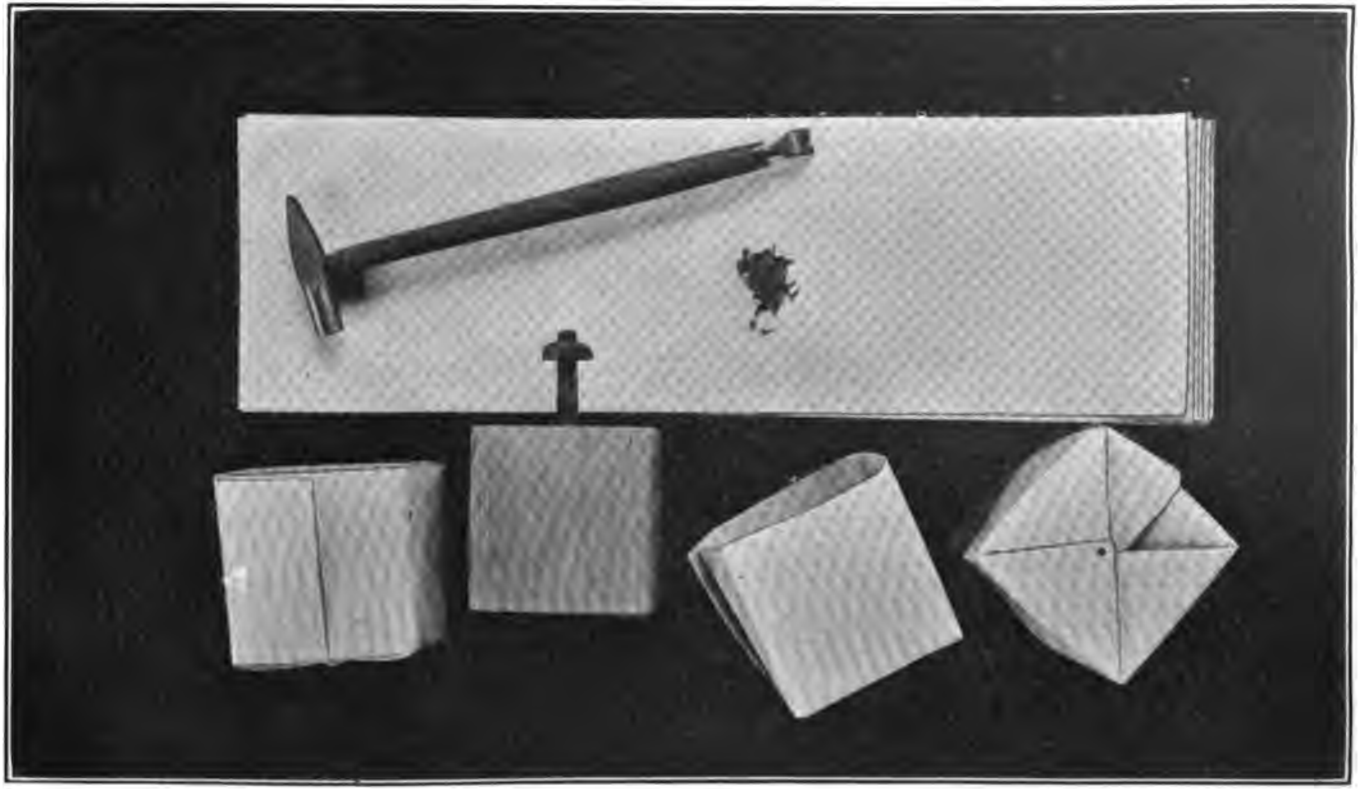


Fig. 7. Paper pots and outfit for making them.

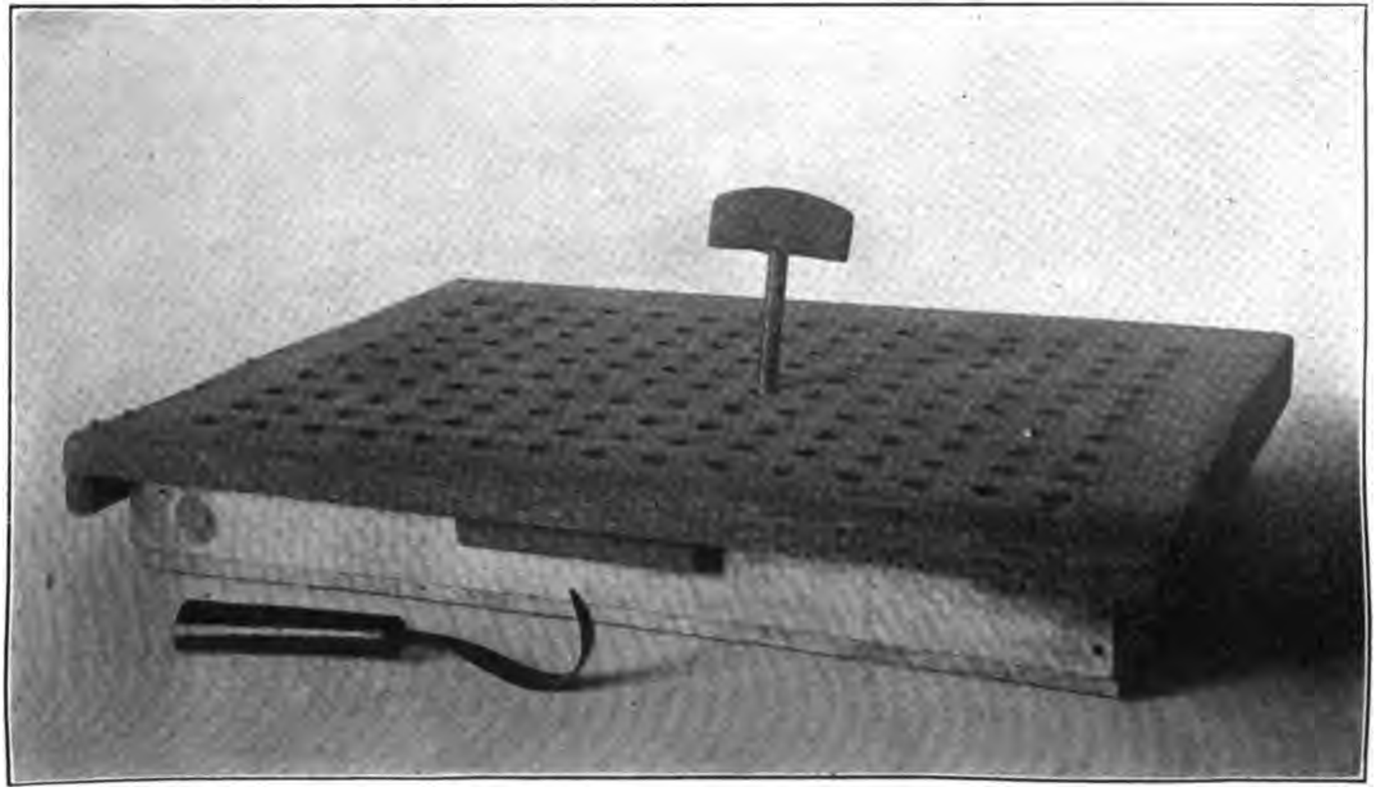


Fig. 8. Transplanting Board and Dibber. Garrahan Weeder Below.

weather because it is so light and flimsy, making weighting necessary, and the canvass, which is water-proof, is too expensive to buy in large numbers. The rye straw mat, all points considered, is unquestionably the best mat on the market. It is as easy to handle as any other mat, does not require weighting on the frames and gives thorough protection to the plants. Figure 4 shows a rolled up straw mat at one end of the cold frame. Most of the books on market gardening give instructions for making these mats at home. This work, although rather tedious, may be done on rainy days. Straight rye straw should be provided for the purpose and it should be protected from mice and rats. High grade straw mats are now made by machine and sold at prices which scarcely justify making them by hand.

The life of straw mats depends largely upon their care. It is easy to destroy them in a single season if carelessly handled while they should last several years if given the proper attention. Most mats are six by six and a half feet and are intended to cover two sash with the ends lapping over the ends of the sash. To remove the mats, walk along the alley on the upper side of the frame and take hold of the mats at the ties of the tar strings and draw them from the frames. It will facilitate the work of covering the frames in the evening if the mats are folded back until the edges meet and this will also keep one side of the mat dry in case snow should fall during the day. If several inches of snow has fallen during the night it should be shoveled or scraped off before attempting to remove mats. If the mats are wet and heavy, walk along the lower side of the frame, catch them at the ties and fold them over toward the upped side as far as may be convenient. Then, this lapped over end can be easily reached from the upper side of the frame and the mat removed without much strain on the two cords. If wet when removed in the morning they should be spread to dry or if not too many they may be hung on wires or other supports. To cover sash, step on the mat if it is spread out flat, reach behind, catch the mats at two places where the cords are tied and walk across the frame on the sides of two sash immediately above a cross bar, drawing the mat across both sash. By a little practice the mat can be readily dropped to place without much further attention. Mats should be hung up and thoroughly dried when nolongerneededfor the protection of plants and then stored where they will not be damaged by rats and mice. A very good plan is to store on platforms suspended from rafters in the barn.

GROWING EARLY VEGETABLE PLANTS.

Success in market gardening depends largely upon reaching the market early when prices are good and produce finds ready sale. To accomplish this it is necessary to grow strong, thrifty plants which have been hardened and ready for the field the first day weather and soil conditions are favorable for transplanting. If the plants are for sale it is equally important to have them ready when the patrons want them and it is just as important to have high grade plants as when they are to be used on your own farm. The production of strong vigorous plants is a matter of good management. The frames or greenhouses cannot be neglected and then satisfactory results expected.

Work begins in the fall by the selection of good soil. Some growers prepare the soil during the summer by making an application of several inches of manure on any good soil in the spring and plowing this plot several times during the season. Additional manure may be added at the second plowing if vegetable matter is wanting. Other growers go to the trouble of stacking manure and thick sods in alternate layers of eight or ten inches a year in advance of the time when the soil will be needed. When quite well decayed the pile may be turned several times at intervals of ten days or two weeks. The first plan is more economical and just as satisfactory. Other growers prefer to select any good garden soil and add rotten manure as may be required.

In the selection of soil, it is important to consider several factors: (1) It should be free from fungus diseases, as club root and other maladies that might cause trouble. Fields which have been producing any of the crops to be started under glass should be avoided in the selection of soil. (2) Stones, sticks and other rubbish should be screened out. (3) Soils containing a great many weed seeds should not be used. (4) A considerable quantity of sand is always desirable. If the soil does not contain this naturally, it can often be procured at small cost and added as may seem desirable. Sand is especially valuable in starting tender seedlings. The addition of plenty of rotten manure to any good farm soil will usually put it in good condition for growing vegetable plants.

Both the soil and manure should be procured in the fall before the hard freezing weather and stored in the dry where they will not be frozen hard when wanted for use, probably in mid-winter. The neglect of this matter is certain to cause annoyance. It is best to store the soil during September when it is quite dry and may be screened if necessary. A convenient way to do this is to place a screen with a half-inch mesh over a low wagon, slanting it so the stones and coarser parts will run onto the ground. This will obviate the necessity of screening in the winter time unless some very fine soil is wanted for special purposes.

Sterilization is being practiced more and more by plant growers. It destroys troublesome weed seeds and greatly reduces losses from fungous diseases. There are two common methods, namely, by steam and formaldehyde. There are various ways of applying the steam.

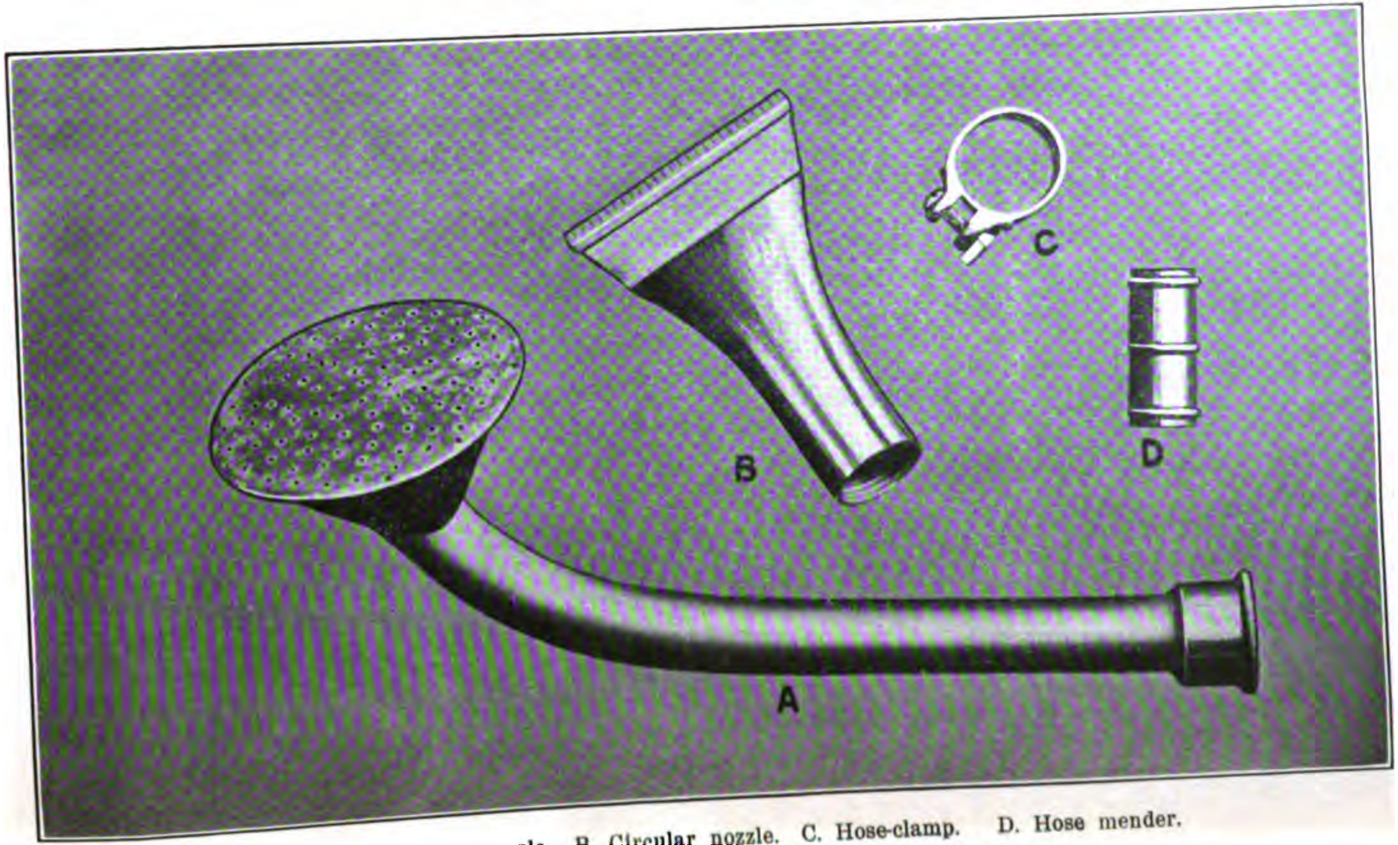


Fig. 9. A. Circular nozzle. B. Circular nozzle. C. Hose-clamp. D. Hose mender.

One of the most thorough is to place the soil in tight tanks, admitting steam at high pressure. The soil should be subjected to very high temperatures for not less than an hour, and a longer period is an advantage.

When formaldehyde is used the soil is soaked with a solution made by adding one and one-half quarts of this solution to fifty gallons of water. One gallon of the diluted solution should be applied to each square foot of soil.

The grower should know the vitality of his seeds before sowing. This may readily be determined by making a simple test several weeks before it is time to make the main sowings. Count one hundred seeds of each variety to be tested and plant in separate rows. The number of plants which come up may then be counted and the germinating power accurately determined, and the thickness of sowing regulated accordingly.

Seeds may be sown in rows or broadcast. The row method takes more time, but it is preferable. The plants then come up with greater regularity. They are likely to be straighter and can be handled more rapidly. When the seed is sown in rows the plants help each other in reaching daylight and this is an important point if there is much clay in the soil. The plants from rows may be lifted more rapidly and are kept in better order when transplanting and these advantages more than offset the extra time required in sowing.

See that the flats are level full before sowing begins and that the soil is well firmed along the sides and in the corners of the beds or flats. A straight edge should be provided to make the furrows. These furrows may be one and one-half inches apart if the space is limited, although a two-inch space is better and is more commonly used. When the furrows are closed there should be about one-fourth inch of soil over the seeds although less amount is better for celery seeds unless the soil is very loose. In closing the furrows the straight edge or piece of lath may be drawn lightly and carefully over the rows or the work may be done with the fingers or a pot label. The soil works much better if fairly moist. It may be properly moistened before sowing by sprinkling with hose or watering can as it is shoveled into a second pile.

Inexperienced gardeners are usually perplexed about how thick to sow seed. Twelve seeds per inch of furrow will usually make a good stand. You should count on at least ten plants in this distance and this will make over a thousand plants in a flat of ordinary size. If the seed is sown too thickly the plants will be crowded and become weak and spindly and they will then be tedious to transplant. Figure 10 shows a flat of cabbage plants ready for the field.

After sowing, the boxes or beds should be watered thoroughly. More water should not be needed until the plants are coming up, although it may be necessary to water dry spots before germination is complete. Be careful not to overwater. The soil should be kept moist but not wet. It is better to water in the mornings and the plants will then dry off before night, lessening the danger of damping off.

Ventilate every day if possible, but guard against cold drafts striking the plants. See that proper temperatures are maintained. For this information refer to notes on the culture of the various crops.

Seedlings are usually transplanted about four weeks from sowing. The question of time, however, is of no great importance so far as the plants are concerned unless the work is delayed so long that they get tall and spindly. In the growing of most plants as cabbage, lettuce and cauliflower, transplanting usually begins three weeks from sowing and is continued two weeks. Some gardeners begin transplanting when the rough leaves are about the size of peas.

If flats are to be used, about three-fourths of an inch of rotten manure should be placed in the bottoms before filling with soil. Perhaps the chief advantage in using manure in this manner is that it facilitates getting out the plants with a block of soil attached to the roots, as seen in Figure 6.

In filling a flat after the layer of manure has been placed in the bottom, see that the soil is firm over the entire box and well pressed into the corners and along the sides. This precaution prevents too much settling and the soil does not dry out so rapidly.

The transplanting board, as illustrated in Figure 8, is now placed over the filled flat. It is important that the board rests firmly on all parts of the soil to prevent filling of the holes when the dibber is removed. A home-made dibber may be substituted for the iron dibber if desired, but the iron tool is better and more durable. It is most convenient to begin punching in the back row and working from side to side. This work, after a little practice, will be done very rapidly by a boy and he can prepare flats as fast as several persons can transplant. The punching should be done on a solid table or box of convenient height to the operator. After making holes, the box is removed to a bench where the work is continued. Several boys or girls can drop the plants. The weakest plants should be discarded. Time will be saved by dropping plants in the back row first, always working from left to right, and leaning plants backward. The work of fastening the roots should be done by older persons who will see that the soil is pressed firmly about the roots of every plant. Fastening may be done with the fingers, or by the use of the forefinger of the left hand and about a three-eight inch dibber held in the right hand.

Many gardeners do not use the transplanting board, but it is unquestionably a decided advantage, especially if children or careless workmen are employed. When a transplanting board is not used the

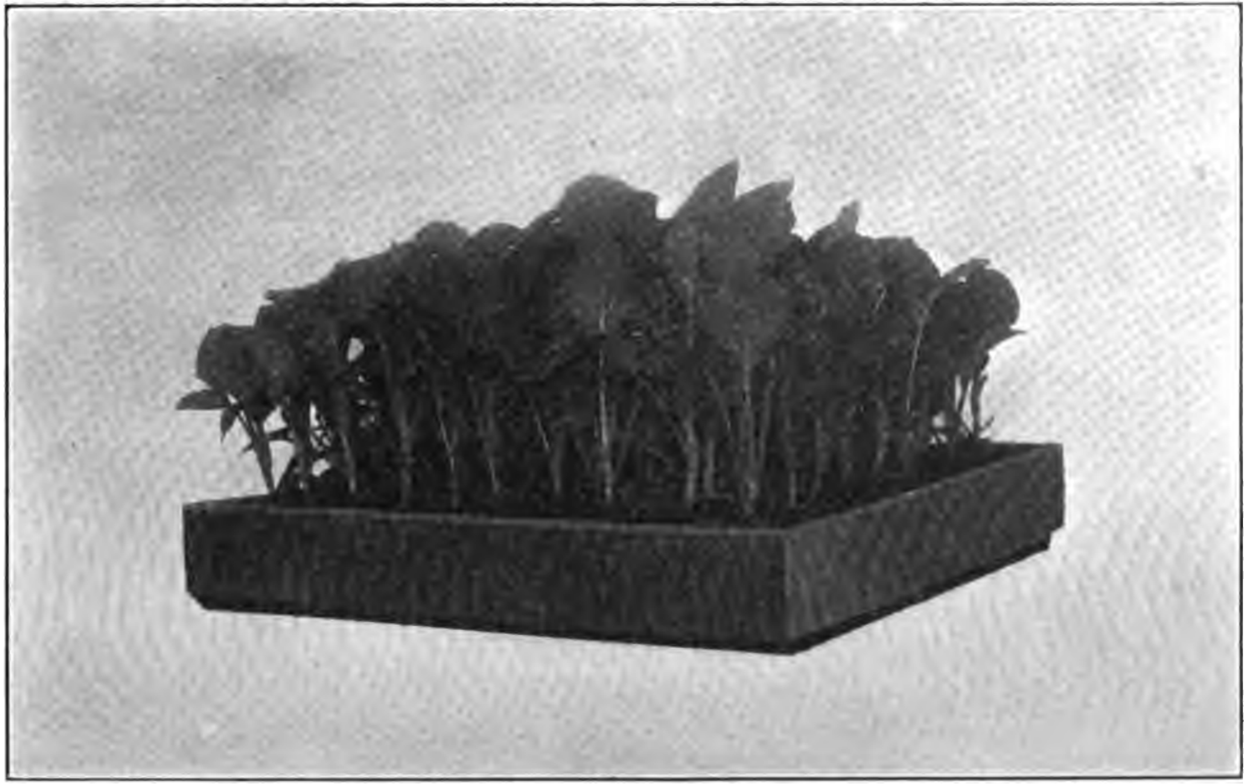


Fig. 10. Cabbage Plants Ready for the Field.

holes are generally made with a dibber of suitable size held in the right hand and the roots are covered and secured with this small tool while the plant is held in place with the left hand.

It is very important that the soil be properly moistened before planting begins. The work will not only be performed better and more rapidly, but watering will be necessary immediately after the plants are set which is of some advantage although the usual plan is to apply water very soon after transplanting. When the boxes are carried or hauled to the cold frame or placed on the greenhouse bench, many growers prefer to delay watering until the next morning when the plants are more rigid and will not be forced to the ground by the weight of the spray. It is important not to water too freely at first, especially if the plants are transferred to the cold frame during either cold or close, humid weather. Watch the plants daily to see whether they need water. Be careful to avoid over watering, but keep the soil moist. During the first two or three weeks general waterings may not be needed but the sides and corners of the boxes should be watered to keep them from becoming too dry. Lack of moisture invariably dwarfs the plants, and if other parts of the flat are sufficiently moist, the plants when ready to set or sell will lack uniformity in size.

Very little if any ventilation is required for a few days after transplanting, especially if the weather is cold. The same is true in hot windy weather when the plants should be shaded and very little air admitted until root growth has been made. After the plants are well established sufficient air should be admitted to the frames daily to induce a strong, stocky growth. Notes on the various crops give additional details on their management in hotbeds, cold frames and greenhouses.

Plants should be well hardened before setting in the field or offering for sale. It is especially important that the hardening process be given careful attention with cabbage, lettuce and other plants which go to the field when hard freezes are likely to occur. Hardening begins at least a week before field planting, by giving free ventilation. The first morning the sash may be drawn so that one-fourth or perhaps one-half the area in the cold frame is exposed. In a day or two the sash may be removed entirely, taking them off early in the morning and not replacing them until late in the evening. The next night, perhaps the mats may be left off and about two nights later leave off the sash. The process should be gradual. When hardened, cabbage plants have a reddish blue color and in this condition they will stand a hard freeze. Tomatoes and other tender plants cannot be hardened to the same extent. A limited supply of water also helps to make tough plants. This is especially true of tomatoes.

STABLE MANURES.

An immense quantity of stable manure is used by gardeners in the vicinity of large cities. It is often depended upon as a source of plant food, although the majority of vegetable growers supplement by the application of commercial fertilizers. Near the large cities, growers often keep a team or two on the road the year round hauling manure and these teams are seldom taken off for any other work. The wagons are usually large and strongly built. At New York, Boston and Philadelphia the wagons are often loaded with from three to five tons of manure (See Figure 11) while in other sections about two tons constitute a load. The largest wagons are sometimes built at a cost of three hundred dollars.

The cost of manure varies greatly. Occasionally growers are paid for keeping city stables clean. In other instances they get all they can pile on their wagons for twenty-five to fifty cents per load whether it is a ton or five tons. When shipped short distances on the train the cost per ton delivered ranges from $1.75 to $2.10. A large operator in Maryland pays from $2.75 to $2.90 for manure delivered on the siding on his farm. The price that a gardener can afford to pay for manure depends upon the quality of the manure, quality and character of the land to be fertilized, crops to be grown and the skill of the grower. The Maryland grower, referred to, attributes his success mainly to the free use of manure, although it has cost him thousands of dollars a year.

Manure is the best fertilizer for vegetable growing, because if used in large quantities the supply of soil humus is maintained and it is then possible to follow an intensive system of annual cropping. Manure keeps the soil loose and friable, retains moisture, furnishes plant food and provides favorable conditions for friendly bacteria.

An application of fifty tons per acre is considered a very heavy one, although larger amounts are sometimes used. Twenty-five tons per acre is a liberal dressing for some crops and even half this amount, supplemented by commercial fertilizer often produces excellent results. It is a fact, however, that those who use manure the most freely are apparently the most prosperous. There is much more likelihood of using too little manure than too much. This is particularly true in the growing of onions, celery and the root crops.

Manure from any of the farm animals is satisfactory for garden work. Poultry manure is, of course, worth the most money, and if produced on the farm it should be carefully preserved for garden work. Practically the only kind used in intensive gardening is horse manure and this varies considerably in quality.

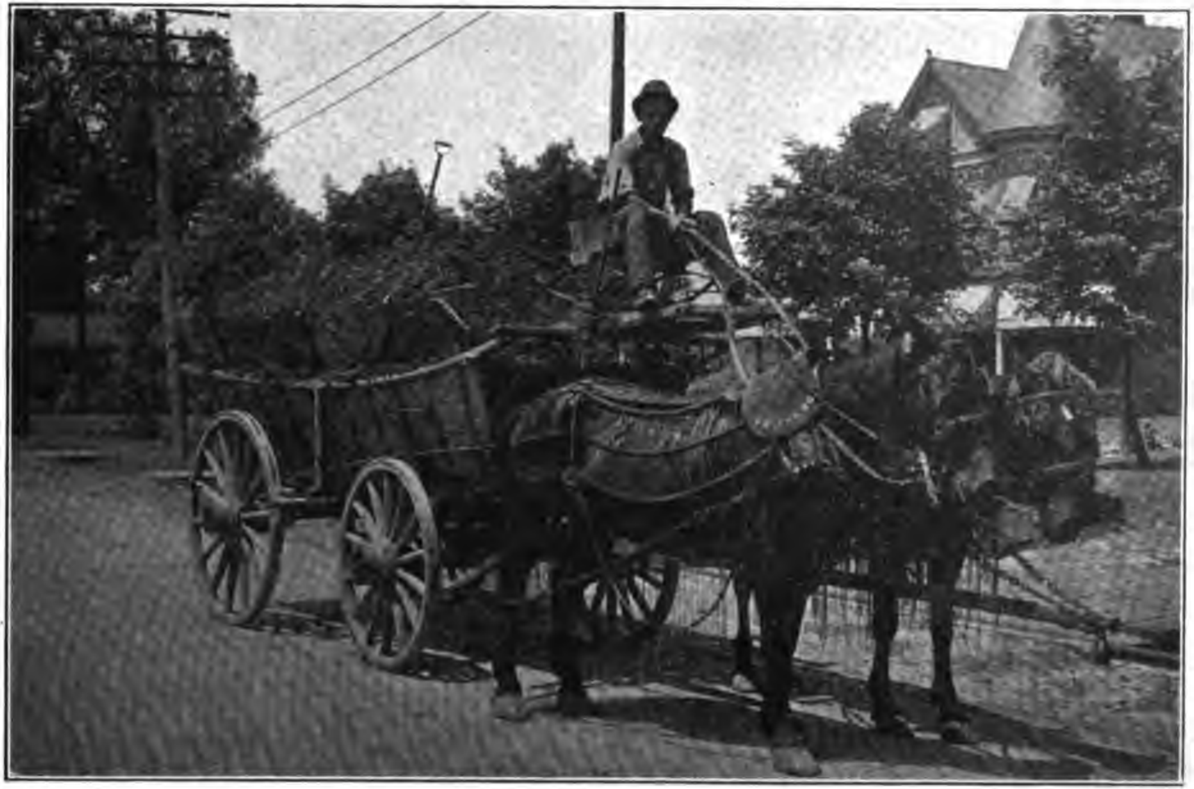


Fig. 11. A Load of Manure in Philadelphia County.

There is a great difference of opinion as to whether the manure should be applied fresh or after it is partly or fully decayed. In field trucking where ten to twenty tons are used per acre the best practice seems to be to haul and spread in the field as fast as it is produced or secured at the stable or railroad siding. Where teams are hauling the year round and the area of cultivated land is quite limited, it is necessary and perhaps an advantage to stack in large piles. At the Maryland Experiment station investigations have been made which seem to indicate that it is desirable to allow manure to decay before applying. The usual practice of intensive growers is to place the manure in flat piles that are four or five feet deep. These should be kept well watered, and turning once or twice hastens decay and improves the mechanical condition. At Boston, shredders are sometimes used before the manure is hauled and spread in the field. It is economy to use manure spreaders to apply piles that may accumulate on the premises.

GREEN MANURES.

Gardeners living remote from the large cities have difficulty in getting a sufficient quantity of stable manure. They realize more than ever before the necessity of maintaining the supply of humus. They know from experience and observation that if humus is wanting the soil bakes, becomes hard, is difficult to farm and produces poor crops. The maintenance of humus is the most difficult problem on most farms.

There are two general lines of vegetable gardening. The first is popularly known as market gardening and this relates to the growing of crops by intensive methods. The farms or gardens are usually small, containing only a few acres while they often contain fifty or more acres. The values may range from a few hundred to several thousand dollars per acre. Manure is used with great freedom on these farms. Every possible effort is made to get the crops in early. The rows are close together and companion or intercropping (page 83) is often practiced. One crop quickly follows another and every foot of the land is made to produce as much as possible. It would be impossible to make this kind of gardening a success without the free use of manure. The second type of gardening has been variously called "trucking," or "truck farming" or "field gardening." The farms are generally much larger than in market gardening and the land values lower. Crops as cabbage, tomatoes, asparagus, sweet corn, muskmelons, watermelons, cucumbers, squashes and sweet potatoes are grown on truck farms, while the usual plan in the market garden is to grow beets, onions, lettuce, carrots, parsnips and many other crops.

In market gardening it is not possible to use catch crops or green manures to any great extent because the land is nearly always busy producing cash crops. In farm gardening the situation is very different. The crops are often removed early in the fall in good time to sow crimson clover or rye. These crops can often be sown at the last cultivation of sweet corn, tomatoes or other crops, so they will have a good start before hard freezing weather. They may then be plowed down the next spring thus increasing the supply of vegetable matter and also utilizing soluble plant foods that might have been wasted by leaching. Many of the best truck farms in New Jersey are managed without the use of stable manures except the small quantity that is produced on the farm. Crimson clover is by far the best cover crop when soil and climatic conditions are adapted to its culture. Where this legume or nitrogen gatherer does not thrive, rye may be substituted to advantage.

Many farms in this State would produce excellent crops of vegetables were the supply of the humus increased. There is no better way to accomplish this than by applying lime and sowing red clover. If the soil is too poor to grow clover, and stable manure is not available, other crops may be grown for manurial purposes until the soil is good enough to start clover.

Various courses of green manuring may be followed to build up the poor lands. The following plan is excellent for most farms. Sow rye in the fall, using three bushels of seed and five hundred pounds of a high grade fertilizer per acre. Plow down the rye the next spring when about two feet high. Apply about two tons of burnt stone lime per acre. Then sow three bushels of oats and one bushel of Canada field peas again using the same amount of fertilizer. Adjust chain or rope on the plow and turn in this second green crop in August and then sow rye, which should be plowed down the following spring and followed with a cash crop as late cabbage or tomatoes. This treatment also puts the land in good condition for potatoes and there should be no difficulty in growing clover after such a course of green manuring, especially if lime is used with liberality.

The soy bean is one of the best crops to increase the supply of humus. It thrives well where cow peas fail. The soy bean succeeds much better in clay soils and at low summer temperatures than the cow pea, although both crops are exceedingly valuable as soil builders.

COMMERCIAL FERTILIZERS.

Successful gardeners recognize the importance of liberal plant feeding. Near the large cities the free use of stable manures has not only solved the problem of getting the necessary supply of plant food but also the more difficult one of getting humus. In the great truck regions of the country enormous quantities of fertilizer have been used for many years. Wherever there has been difficulty in getting stable manures there has been likewise a marked tendency to increase the annual application of commercial fertilizers. With skillful management the results have been quite satisfactory, but in too many instances the productive power of the land has decreased, not because of the more liberal use of fertilizers but because of negligence in maintaining the supply of humus or in keeping the soil in pure sanitary condition.

Very few definite experiments have been made in the fertilization of vegetables. We know very little about the subject. One grower uses manure freely, perhaps fifty or seventy-five tons per acre. His neighbors peep over the fence, the crops look good, and they decide that this is the only way to grow big crops and so they all begin hauling manure. In many cases the applications are lavish, and the results are usually satisfactory. The growers, of course, continue the practice. As a rule, this class of gardeners think commercial fertilizers are of little value, but in most instances they have no positive information on the subject. The results might be better if less manure were applied and fertilizers used to some extent at least.

In the great trucking regions of the country, fertilizers are used freely, but not always intelligently. One ton per acre is very common and in the majority of cases it has seemed desirable and profitable to use this amount. In intensive gardening the amount is often doubled. There can be no objection to the free use of fertilizers if the land is handled properly in other respects. The supply of humus must be maintained by the use of manure or of green crops and the land must be kept sweet. An extremely acid condition often arises from the free use of chemicals and this is unfavorable to the culture of garden crops. See notes on "Lime and Liming," page 35.

Fertilizers may be employed with perfect safety and with most excellent results where vegetables are grown in rotation with the general farm crops. In field gardening it is not necessary to fertilize so lavishly, and yet the tendency in this type of farming is to supply insufficient fertilizer for maximum crops. The special notes for the culture of the various crops give additional information on this phase of the subject.

It is a difficult matter to decide just what fertilizers should be used for each particular crop. Crops vary in their requirements, seasons differ, there are wide variations in soils mechanically and physically and the soil treatment of every field varies more or less from year to year. It is always a perplexing problem to the practical gardener to decide just what to apply as well as to the amount that will be most likely to return maximum profits.

The gardener should bear in mind that in most instances nitrogen is the limiting plant food element in growing vegetables. He must have this element in rather large quantities before large yields can be secured. This accounts largely for the free use of stable manure and for the increased popularity of nitrate of soda. In general farming it is not expedient to spend much money for nitrogen which costs from fifteen to twenty cents per pound, because prices received for the crops produced do not justify the expenditure. In market gardening, however, it is a different proposition for high priced food articles are produced, and the grower can well afford to buy nitrogen. It is economy, of course, to use the legumes whenever possible to trap the free nitrogen of the atmosphere, but from a business point of view there need be no hesitation in buying nitrogen.

Nitrogen is especially important for crops of which the leaves or leaf stalks are used for food. The list includes cabbage, lettuce, spinach, celery, kale, endive, Swiss chard, parsley and a few other crops of minor importance. A shortage in either of the mineral elements will certainly effect yields. Most soils need phosphoric acid more than potash although potash is used by vegetables more largely than phosphoric acid as may be seen in the following table:

AVERAGE COMPOSITION OF DIFFERENT VEGETABLES AND THEIR FERTILIZING VALUE.

	Pounds of nitrogen in one ton.	Pounds of phosphoric acid in one ton.	Pounds of potash in one ton.	Approximate fertilizing value of one ton.
Asparagus,	6.0	1.6	6.0	$0 90
Beets,	5.0	2.0	9.0	95
Cabbages,	7.6	2.2	9.0	1 20
Carrots,	3.2	2.0	10.0	80
Cauliflower,	2.6	3.2	7.2	70
Celery,	4.8	4.4	15.0	1 25
Cucumbers,	3.2	2.4	4.8	65
Horseradish roots,	8.0	2.0	20.0	1 70
Lettuce,	4.6	1.4	7.4	80
Onions,	4.0	2.5	3.5	65
Peas,	23.0	6.0	8.5	2 90
Pumpkins,	2.2	3.2	2.0	45
Rhubarb,	2.6	0.4	7.2	55
Spinach,	10.0	3.2	5.4	1 35
Sweet corn, cobs,	4.2	1.0	4.4	65
Sweet corn, husks,	3.6	1.4	4.4	60
Sweet corn, kernels,	9.2	1.4	4.8	1 15
Sweet corn, stalks,	5.6	2.8	8.2	1 00
Sweet potatoes,	4.8	2.0	10.0	95
Tomatoes, fruit,	3.2	1.0	5.4	60
Tomatoes, vines,	6.4	1.4	10.0	1 10

From Penn. Dept. of Agr. Bulletin No. 55.

The above table shows in a very emphatic manner the great need of nitrogen. It not only enters largely into the composition of vegetables but also influences the time of maturity. Vegetables which mature quickly usually command the highest prices and are generally the best in quality. Vegetables should grow rapidly and nitrogen has more to do with quick growth than either mineral element.

In making up a fertilizer for the various crops, the character and previous treatment of the land to be cropped should be taken into account. If land which is to be planted in tomatoes was highly manured the year before, the addition of nitrogen might cause a rank growth of vine at the expense of fruit. The same thing is true of all other crops as peppers, egg plant, peas and beans, requiring a relatively small amount of nitrogen, while with many crops it would be difficult to apply too much nitrogen.

FORMULAS SUGGESTED FOR FERTILIZERS FOR DIFFERENT VEGETABLES.

	Per cent. of nitrogen.	Per cent. of phosphoric acid.	Per cent. of potash.
Asparagus,	4	8	10
Beans,	2	8	10
Beet,	4	8	12
Brussel's sprouts,	4	8	8
Cabbage, early,	6	8	10
Cabbage, late,	4	8	10
Carrot,	4	8	12
Cauliflower,	4	8	10
Celery,	4	8	10
Corn, sweet,	4	8	10
Cucumber,	4	6	8
Egg plant,	4	5	9
Horse-radish,	4	8	12
Kohl-rabi,	4	8	10
Lettuce,	5	8	10
Melons,	4	6	8
Onion,	6	8	10
Parsley,	5	8	10
Parsnip,	4	8	10
Peas,	2	8	10
Peppers,	4	8	10
Potatoes,	4	8	10
Pumpkin,	4	6	8
Radish,	4	8	12
Rhubarb,	5	8	10
Salsify,	4	8	10
Spinach,	5	8	10
Squash,	4	6	8
Tomato,	4	8	10
Turnip,	4	8	12

It should be clearly understood that the above formulas are merely suggestive and might be varied under different conditions. The gardener, however, knows that he cannot afford to take chances by not applying a sufficient amount of every element.

Factory mixed fertilizers are generally employed by the gardeners in this State, but home mixing is more largely practiced every year.

Complete fertilizers can generally be mixed at home for from five to ten dollars less per ton than they can be purchased. This is quite a saving and well worth taking into account. Again, if the fertilizer is mixed at home the grower knows the source of each material and this is often a great advantage. Home mixing enables the grower to take into account not only the needs of each crop to be grown but the previous treatment and probable condition of the fields to be cropped. This matter is of no little consequence and it is a decided point in favor of home mixing.

Then home mixing has an educational value which should not be overlooked. If the rations are determined and the goods mixed at home, the grower becomes a close student of plant nutrition and he will fertilize with greater skill and better results from year to year.

It is a simple matter to determine the required amount of each material with which to make a fertilizer of a given formula. Suppose we desire to mix a fertilizer containing four per cent. nitrogen, eight per cent. phosphoric acid and ten per cent. potash, and that we have on hand nitrate of soda, fourteen per cent. rock phosphate and muriate of potash. Nitrate of soda contains about sixteen per cent. nitrogen. Every 100 pounds of a ton of fertilizer, must contain four per cent. or four pounds of nitrogen. It is seen at once that we must have four times twenty or eighty pounds of nitrogen to meet this formula and as each 100 pounds of nitrate of soda contains sixteen pounds of nitrogen we must have five times this quantity or 500 pounds of nitrate of soda. The formula calls for eight per cent. of phosphoric acid, or eight times twenty or 160 pounds for a ton. Dividing 160 by fourteen, the per-cent, of available phosphoric acid in the phosphate used, we find that 1,143 pounds of phosphate are needed. Two hundred pounds of potash are required. Muriate of potash contains fifty per cent. of actual potash so it will take 400 pounds of muriate of potash to supply this element. These amounts make a total of 2,043 pounds. If a low grade fertilizer is mixed from the ingredients named it would be necessary to use a filler as sand, dry earth or other foreign matter to make a full ton. It never pays the gardener to buy or mix low grade fertilizers. It is much better to use a smaller quantity of high grade material and thus save freight and labor in handling useless materials. The arithmetic of fertilizers is given in very complete form in bulletin No. 55, of the Pennsylvania State Department of Agriculture.

The operation of mixing is a very simple matter. The various materials to be used are weighed and placed in separate piles on a smooth floor at convenient distances from a sand screen with a quarter-inch mesh. This screen should be tacked on a frame three feet wide and five feet long and placed at an angle of about forty-five degrees. Two men with flat bottomed shovels throw the materials on to the upper part of the screen, taking alternately from the different piles. Some gardeners prefer to spread the materials in layers in one pile before shoveling. As shoveling proceeds, the lumps roll to the the bottom of the screen and are crushed with the bottom of the shovels. From a practical standpoint this method is just as satisfactory as machine mixing in the factory and the actual cost of mixing and re-bagging need not exceed fifty cents per ton. It is not desirable to mix more than a month in advance of field application or the fertilizer may get lumpy and cause trouble in drilling or distributing.

Fertilizer is most conveniently applied by means of drills. Some of the special drills or distributors may be adjusted to scatter from a few hundred pounds to two tons per acre. Distribution by hand is not a very slow process and is preferred by some of the best growers in the country. Machine application, however, results in more even distribution.

Nitrate of soda also is extensively used as a top dressing after the crops are started. It is unquestionably of great value in furnishing nitrogen in quickly available form and its use is becoming more extensive every year. Amounts varying from seventy-five to two hundred pounds per acre are applied along the rows or about the plants and sometimes it is sown broadcast letting the crystals fall where they will. If the plants are dry there is seldom any injurious effect from burning the foliage. Nitrate is especially valuable when applied after drouth, and before rain. As soon as dissolved the nitrogen becomes available and plants thus treated often take on a darker, richer color within a day's time. The New Jersey Experiment Station has made many experiments with vegetables showing the great value of nitrate of soda. In the mixed fertilizers it is generally desirable to derive part of the nitrogen from nitrate of soda and part from organic materials as tankage, dried blood, fish scrap and cotton seed meal.

LIME AND LIMING.

The liberal and continued use of acid fertilizers and green manures tends to make soils acid. Where there is marked acidity all of the garden crops fail to thrive. It is important, therefore, to keep the soil pure and sweet and this requires the use of lime.

It is wasteful to plow under so that plowing should precede the spreading of lime. It is also undersirable to mix lime with fertilizers. It is often convenient to apply lime to a fall crop so there will be no interference with the heavy application of fertilizers in the spring. When clover is grown in the rotation it is especially important to apply lime as often as may be needed. Lime is also the best known preventive of club root although it often fails to control this serious disease.

The lime requirement of different soils varies greatly. Half a ton of stone lime per acre is sufficient in some instances. Not less than a ton per acre should probably be applied on most truck farms. If the land is largely devoted to the growing of cabbage, cauliflower or other crops subject to the attack of club root it is desirable to use it much more freely. Growers on Long Island sometimes apply seventy-five bushels of stone lime per acre.

TILLAGE.

Proper tillage is of the utmost importance in the growing of vegetables. There is danger of minimizing its value and of magnifying the importance of the other factors as for example, the use of fertilizers. The right kind of tillage is essential to the best results and if this operation is slighted or neglected the results are always unsatisfactory.

Tillage has so many functions that the gardener should be well informed on the subject: (1) It puts the soil in the proper physical condition for the foraging of plant roots. (2) It conserves soil moisture. Soils which are made fine by the use of tools hold more moisture than soils composed of lumps or coarse particles. Again, soils which are stirred frequently thus producing and maintaining a fine surface mulch lose less water by evaporation. (3) It secures conditions which are favorable to chemical activities, thus facilitating such changes as are necessary in the preparation of plant food. It aerates the soil which not only favors chemical changes but is essential to the life of friendly bacteria. (5) It destroys weeds and is often destructive to insects which are harmful to growing plants.

A great diversity of tillage tools are used by vegetable growers. It is important to purchase the best. In buying tools four factors should be considered, namely, their efficiency, rapidity in performing work, durability, and ease to the operator and horses. Cheap tools never pay because they seldom meet any of these requirements.

A common mould-board two-horse plow is necessary on every truck farm. A one-horse plow is very convenient for some lines of work. Disc plows are slowly coming into use and they are worth considering, mainly because their pulverizing power is much greater than the mould-board type. Riding plows are often employed on smooth soils and their use could well be extended in all important trucking sections.

Several kinds of harrows are necessary on most trucking soils. Disc or cut-away types are indispensable on sod or clay lands. Spring tooth harrows are necessary where stones are plentiful, but these tools are often used when disc harrows would do much better work. There should be a Meeker smoothing harrow on every farm. The large number of small discs and the leveling board do better and more

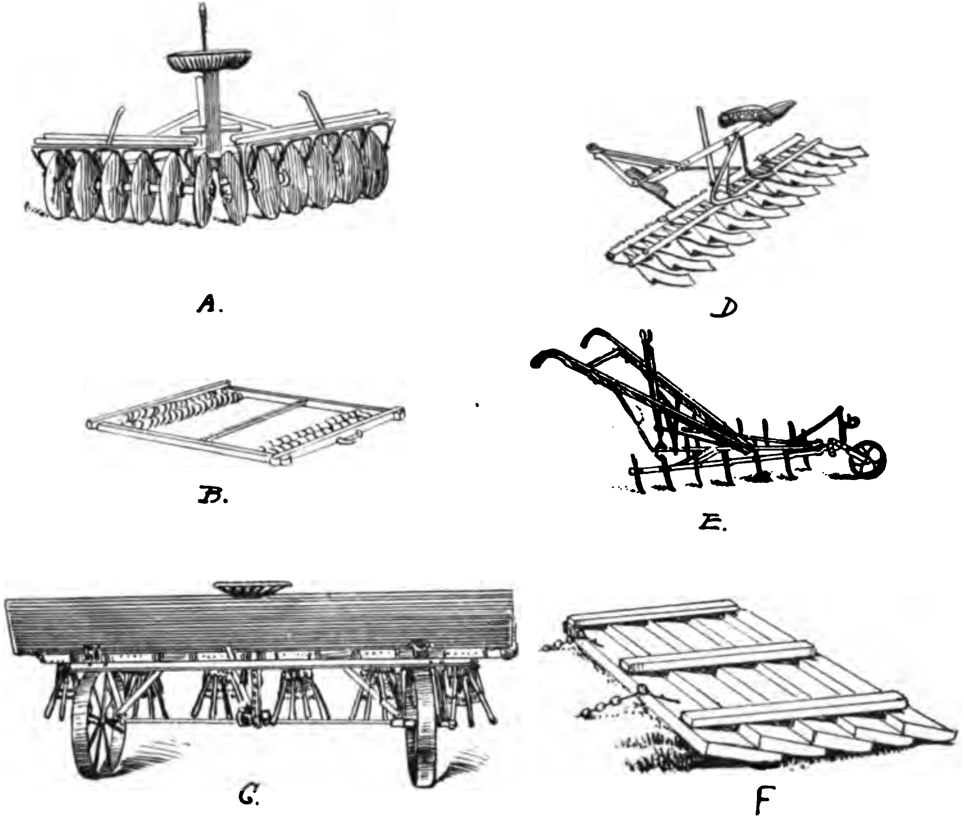


Fig. 12. (A) Disk Harrow. (B) Meeker Harrow. (C) Fertilizer Distributor (D) Acme Harrow. (E) Spike-tooth Cultivator. (F) Plank Drag.

thorough work than is usually accomplished with a garden rake. The Acme is popular on many farms. Although spike tooth harrows are very common throughout the country, they are very inefficient compared with other types just mentioned. (See Fig. 12.)

This chapter would not be complete without mentioning the tools variously designated as a planker, plank drag or float. They are now found throughout the country and are highly valued as pulverizers and levelers. In the preparation of soils for planting, inexperienced gardeners are often puzzled as to the best procedure. In the spring preparation of clay or clay loam the following plan should put the soil in the very best condition for seeding or planting: (1) Plow as soon as the ground is dry enough. (2) Drag the plowed land when dry enough to prevent much soil adhering to the plank. It is usually best to attend to this work daily until the entire field has been plowed and dragged. (3) Disk the land after dragging. (4) Use the disk harrow and drag alternately until the soil is thoroughly pulverized. (5) Give one or two finishing strokes with the Meeker smoothing harrow. Sands and sandy loams do not require so much work in the preparation for planting.

A great variety of cultivators are on the market. All things considered the spike tooth or narrow shovel type is the most efficient. The one-horse cultivators usually contain about a dozen spike teeth or narrow shovels. These are much better pulverizers and conservers of soil moisture than cultivators with a few broad shovels. Riding cultivators can be used to advantage with many crops. Horse weeders are valuable in cultivating such crops as potatoes and sweet corn. The most important point in their construction is that the teeth be rigid as well as strong so they will not break or become permanently bent.

More or less hoeing is necessary in the culture of nearly all vegetables. All kinds of hand work should be avoided as much as possible but it is poor economy to allow the weeds to start and the ground to bake and become hard in spaces which cannot be reached by the horse tools or wheel hoes. Different types of hoes are required for different kinds of work. For the larger crops, where there is plenty of space between plants, the broad blades and rake types should be used as much as possible to economize in labor. (Fig. 13.)

Hand wheel hoes are indispensable in market gardening. Both the single and double wheel types are in common use. When the soil is smooth, level and easily worked the double wheel hoe is entirely satisfactory and economizes labor. One of these tools should be in every farm home to work the home garden even if vegetables are not grown for commercial purposes. They are great labor saving devices, and if all the vegetables were grown in straight rows with space for using wheel hoes the production of the garden crops would always be a pleasure.

Hand weeders of various styles are shown in Figure 13 and are very serviceable. The weeder in Fig: 8, designed and used by M. Garrahan & Son, of Luzerne county is especially valuable in weeding and thinning.

IRRIGATION.

The lack of soil moisture is the most common cause of disappointment in crop production. This is more true in market gardening than in general farming. The average annual rainfall in Pennsylvania is heavy and yet scarcely a season passes without severe losses in some part of the State.

Water is unquestionably the most important factor in the nourishment of plants. It dissolves plant food and performs many other functions in the soil. It serves as the vehicle to convey food in the soil and in the plant and enters largely into the composition of all vegetables. From a commercial standpoint a full and constant supply of moisture in the soil has three values: (1) It favors early maturity in most instances and early maturity generally means the highest prices. (2) It is essential to maximum yields. (3) It is necessary for the development of the best quality. Quality in vegetables is often a question of succulence. We want crisp, tender, juicy vegetables and the moisture requirements of the plant must be met to secure these conditions. In seasons of drouth the demand for vegetables is keener and prices better. This is one of the strongest arguments for irrigation. A Pennsylvania gardener who irrigates makes the largest profits in seasons of drouth.

It is a fact that a host of vegetable growers in this State lack the necessary facilities for irrigation. Also, there are hundreds of splendid streams in Pennsylvania running through lands that are well adapted to vegetable gardening and where it would be a simple matter to irrigate by modern methods. A few men in the State have seen these possibilities and are now growing more profitable crops because they are prepared to apply water when it is needed.

There are many ways of distributing water as by open ditches and furrows, flooding through tile laid on top of the ground and in subirrigating lines, iron pipes, wooden troughs, and by various temporary sprinkling devices. Any of these methods may be valuable under certain conditions, but the plan which is attracting universal attention among market gardeners and greenhouse vegetable growers is known as the Skinner System of Irrigation.

This system was discovered several years ago by a practical gardener and is being installed rapidly throughout the East. It consists of iron pipes running in parallel lines about fifty feet apart

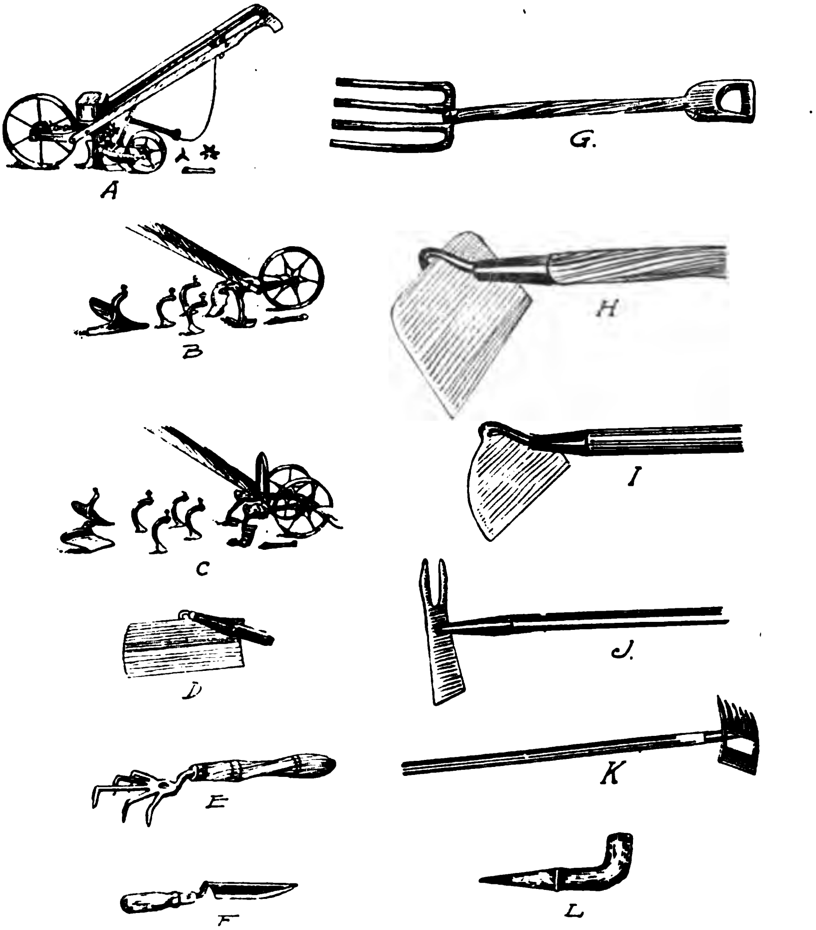


Fig. 13. Hand Tillage Tools. (A) Seed Drill. (B) Single Wheel Hoe. (C) Double Wheel Hoe. (D) Celery Hiller. (E) Excelsior Weeder. (F) Trowel. (G) Spading Fork. (H) Hilling Hoe. (I) Half Moon Hoe. (J) Weeding Hoe. (K) Rake Hoe. (L) Dibber.

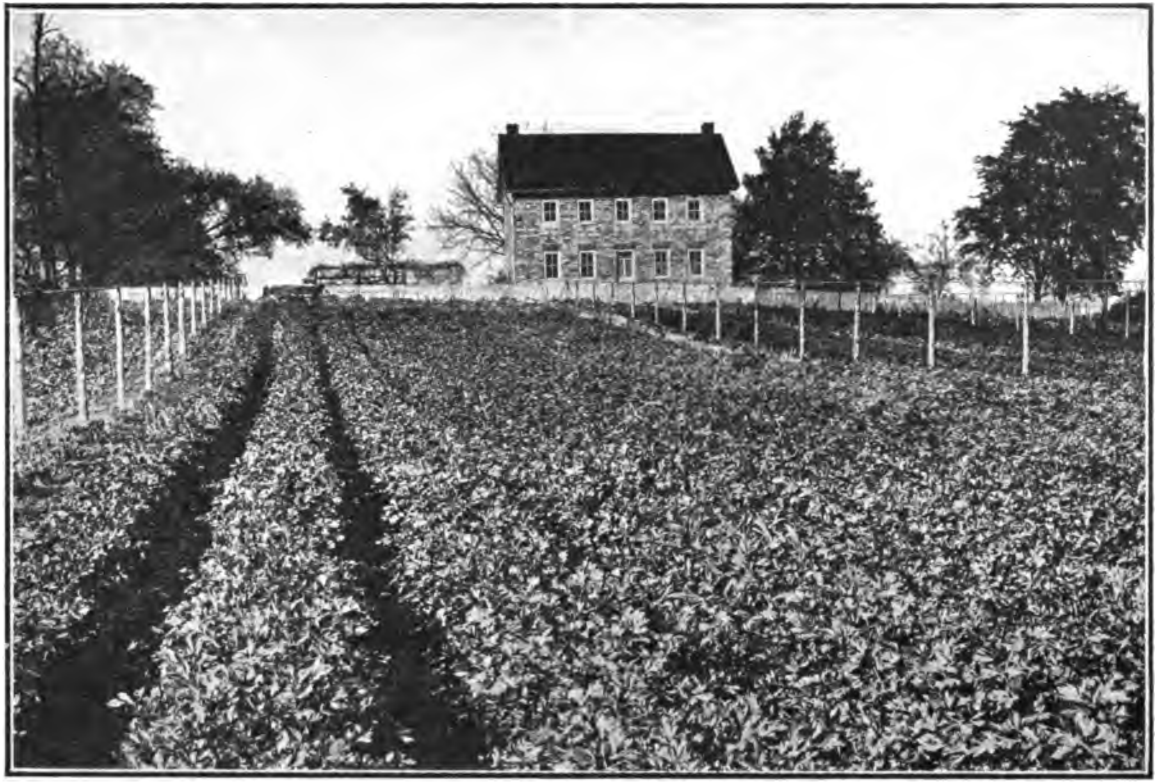


Fig. 14. "Skinner's System of Irrigation Lines—50 feet apart. Cedar Posts."

and at any convenient height from the ground, as shown in Figure 14. At intervals of four feet brass nozzles are inserted which diffuse the water into a fine spray. A patented union makes it possible to turn at will a given line which may be three hundred and forty feet long thus irrigating in the most perfect and thorough manner a strip fifty feet wide and not more than three hundred and forty feet long. The water must flow through the pipe at a pressure of not less than fifteen pounds per square inch although a liberal supply of water is more important than high pressure. The pressure may be secured by piping from reservoirs or streams at higher elevations, or by piping directly into the irrigation lines. Both plans work successfully when properly installed.

The advantages of this system may be stated as follows: (1) Uniformity of distribution. (2) The spray falls so gently that all of the water soaks into the ground without erosion or serious baking of the surface of the soil. (3) The cost of installation is certainly no greater than with many other systems. (4) The cost of operating is much less than with any other system unless it is flooding which is not suitable to vegetable gardening.

Drilling machines may be bought to make holes for the nozzles. The installation of the plant is a simple matter and may be readily accomplished by any intelligent gardener. It is not necessary to give detailed information here about the system for bulletins are issued by the manufacturers of the drilling machines, nozzles and unions which give full instructions for installation and use. A line of this system, as shown in Figure 15, is in use in the gardens at the Pennsylvania State College and visitors will be welcomed at all times to inspect the system.

SEED SUPPLY.

Results in market gardening are largely dependent upon the kind of seed used. Few producers realize the importance of this factor. Maximum yields are not possible without the best seed. High quality cannot be secured without the right kind of seed. Earliness and uniformity in all respects are influenced by the seed used. Whether purchased or grown at home the requirements should be as follows: (1) Freedom from impurities or foreign materials, such as sticks and stones. (2) True to name. If a gardener orders Stone tomato seed the dealer has no right to substitute Matchless although he may consider it just as good. (3) The best strain of Stone or Matchless or whatever the variety and the vegetable may be. Experiments at the Pennsylvania State College show that marked varietal variations occur in different classes of vegetables. (4) The seed under favorable conditions must germinate promptly and there must be a high percentage of germination.

All of these requirements are seldom met. Garden seeds are usually free from impurities, the standard varieties are generally true to name, and as a rule, they grow well, but proper care is not always exercised in breeding high grade seeds. If one strain of Jersey Wakefield cabbage produces one hundred dollars per acre above another strain of the same variety it is time that the growers of cabbage seed adopt better methods.

Most market gardeners depend upon regular dealers for their supply of seed. This has been the custom ever since seed houses were established and will doubtless continue indefinitely. The plan has many points in its favor. It is nearly always cheaper and less troublesome to buy your seeds than to grow them at home. The reputable houses employ experts to grow or supervise the growing of their seeds and the results should be entirely satisfactory. When not satisfactory under favorable cultural conditions it is an evidence of carelessness, negligence or inability in the production of such seed.

Too much care cannot be exercised in buying seeds. Only well known reputable growers or dealers should be patronized. The windy catalogue descriptions of some houses count for nothing. The safe plan is to rely upon your own experience or that of successful gardeners who are producing under similar conditions. Buy only the best. The cost is a secondary matter. Some houses offer several strains of the same variety and as a business proposition it pays to buy those which have been bred with the greatest care, although the cost may be several times as great. When a general line of seed is required it is usually desirable to buy from different houses. One house may have the best strain of a certain variety while another has the best of some other kind. The largest and most successful growers seldom buy all their seed from the same house.

When a grower has been fortunate enough to get an unusually fine strain from a given house, a common practice is to buy enough seed of the same strain to last several years, provided the longevity of the seed will justify it. When this is done, a germination test should be made each year to determine how thickly the seed should be sown.

The practice of saving seed at home is becoming more general among the largest producers of certain classes of vegetables. The advantages of this method depend very largely upon the care and ability of the producer. If it is done carefully and intelligently nothing can be said against the practice, provided the grower has suitable soil and climatic conditions for the production of the seed he needs. There is a tendency, perhaps, to overestimate the influence of soils and climates upon seed production. We know very little about this question. If a gardener has cultural conditions adapted to the growing of any vegetable, it is likely that he can grow his own seed with entire success, although there are exceptions. The fact remains, however, that many highly successful gardeners in all parts of the country grow most of their own seeds. The argument raised in favor of home production are that there is absolute certainty regarding the variety; if only one variety is grown there can be no mixing; just the type of vegetables may be selected and bred which satisfies the grower and will probably meet market requirements.

The plant and not the individual fruit must be taken as the unit in saving seed. If, for example, the finest tomatoes are selected at random over a field, very little if any progress will be made. If, on the other hand, a plant is found which is strong and vigorous, producing a very large crop of extra fine tomatoes, the bulk of the fruits should be saved for seed purposes and planted in a separate patch. By following this practice from year to year the grower may expect far better results than by saving exceptionally fine individual fruits without taking into account the various plant characteristics also. Among the vegetables which are well adapted to home seed growing in this State may be mentioned sweet corn, tomatoes, cabbage, cucumbers, lettuce, peppers, beets, turnips, onions, muskmelons, watermelons, squashes and beans.

MARKET PROBLEMS.

To dispose of a crop at satisfactory prices is often a more difficult problem than to produce it. Certain factors exert an important influence in getting the most money out of a crop, and inexperienced gardeners should know that these factors cannot be ignored without affecting returns.

(1) Study your market. Find out what it wants. Don't grow a lot of beans if the people want cabbage. Markets vary greatly in the classes of vegetables consumed. This is especially true if the foreign population is large.

(2) Ascertain the few vegetables that are in greatest demand and then make these your leaders if your soil and climate are suitable for their production. It is an advantage to produce a few crops on a large scale. You soon establish a reputation for these specialties. People learn that you have certain crops and naturally look to you for their supply. It is desirable, too, to grow enough vegetables to run the market regularly if the produce is marketed by wagon. If shipping, it is just as great an advantage to make regular consignments. The gardeners who make daily shipments or send a wagon to market every day are the ones who succeed best in holding their trade and in getting good prices.

(3) Earliness is generally, although not always, an advantage in getting good prices. A few days often make a great difference in the prices received. Earliness not only secures better prices but makes easier sales.

(4) Proper grading counts for much in making a crop pay, especially if it is shipped to the cities. One or two under-sized or inferior specimens in a package may repel a buyer or compel the dealer to lower the price. The product in each package should run uniform in size and appearance.

(5) Cleanliness is important. See that all vegetables are bright and clean before offering to the trade.

(6) Adopt a style of package which is popular on your market. As a rule it pays to use small packages when prices are high and large packages when prices are low. A change of style or size of packages when the market is glutted sometimes secures relief. Many points are in favor of the small package. It generally looks better, carries better, sells better and is more convenient to the consumer who perhaps carries it from the grocery to his own home.

(7) The arrangement of vegetables in the package should be pleasing and every possible effort made to secure attractiveness.

(8) The market wagon should be neat, painted and lettered, the team and harness respectable and the personal appearance of the salesman not neglected. The whole outfit will then command respect.

(9) Know the market value of your produce, if possible, before offering to the trade. Be sure you are right as to values and then fix your own prices and don't change if it can be avoided.

(10) Telephonic communications with the market is a great advantage. It is then easy to keep posted on prices. Orders can often be secured by phone with little effort and the merchants will find it convenient to order produce when their supplies run low.

Much might be written on market problems, but the reader is referred to Bulletin No. 202 of the Pennsylvania Department of Agriculture which discusses in a comprehensive way every phase of this important question.

ASPARAGUS.

This is one of the most important truck crops. It is generally grown commercially on a large field scale although with intensive culture on small areas the returns are often equal to the receipts from crops which are more commonly grown by market gardeners. It is certainly one of our best crops, usually finding ready sale on the large city markets and the supply is inadequate to meet the demand in the smaller markets.

The saline, sandy loams near the seashore are best adapted to asparagus, although the crop is grown on a great variety of soil types. Of the inland locations, the sandy loams are unquestionably the best, especially if white grass is to be grown. It is often grown on the heavier soils with entire success. Any soil which will grow a good crop of corn can be made to produce splendid crops of asparagus. The soil must be retentive of moisture and abounding in plant food.

Plenty of manure and fertilizer will generally put the soil in prime condition. Drainage, of course, must be looked after if the soil is not naturally well drained.

A long list of varieties is offered for sale by our nurserymen and seedsmen, but there is no necessity for this confusing list. The most successful growers of the country are almost unanimous in their decision that Palmetto is the best for all soils and all conditions. The plants are strong and vigorous, the shoots large and it is considered more resistant to rust than most other varieties.

Nearly all nurserymen and many seedsmen grow asparagus roots for sale. It is better, however, for the gardener to grow his own roots. It is less expensive and there are several decided advantages. The seed should be secured from strong, vigorous plants containing a few large shoots rather than many small ones. The seed plants should also be free from rust. There are expert asparagus growers in the country from whom seed my be purchased. After the grower has an established plantation it will pay him to select his own seed.

The growing of plants is a very simple matter. The seed germinates slowly and should be sown early in the spring, just as soon as the ground can be prepared. If to be cultivated with a handwheel hoe the rows should be about sixteen inches apart. Drop the seed in shallow furrows, cover with about an inch of soil or more if it is sandy and thin the plants to stand about an inch and a half apart. If the soil is fertile and good care is given the plants, they will be ready to transfer to the permanent plantation the following spring

At this point we must decide whether we will grow white or green grass. For many years the white grass was preferred in our city markets and is still consumed in large quantities. It is considered less troublesome to grow because the ridges of soil protect the shoots from the beetles. On the other hand the rows must be farther apart to provide soil for ridging, the quality is poorer and the prices lower. For these reasons the green product is becoming more popular and is being grown much more largely for all of our markets.

Planting distances vary greatly. The most common practice is to allow about twenty inches between plants in the row. If to be ridged there should be not less than five feet between rows. In the growing of green grass four feet seems to be ample space and on one of the best paying plantations in Ohio the rows are only three feet apart. Four feet is as close as can be planted to permit of thorough cultivation with a horse. To still further facilitate horse tillage, some plant four by four feet.

Unless the soil is in a high state of fertility it may pay to begin soil preparation a year in advance of planting. There should be a liberal supply of humus, so that green manures (see page 29) and stable manures can be used freely and to good advantage. We are starting a crop to last from ten to twenty years or even longer and too much attention cannot be given to this matter. If the soil is fairly productive, manure and fertilizer may be added and planting started at once. Ten to thirty tons of manure should be used per acre and not less than half a ton of fertilizer. (See page 30). The roots should be planted just as soon as the ground can be prepared in the spring. See that the soil is deep and thoroughly pulverized.

It is well known that the crowns of the plants get nearer the surface of the ground every year. This is due to the fact that the buds form higher each year so that the old stems are attached to the crown lower than the new buds. When the crowns get very near the surface the cultivators and harrows are likely to catch and damage them and to avoid this trouble as long as possible, the roots should be set fairly deep. Years ago they were often set a foot or even more below ground level and trenching was sometimes resorted to in order to provide a very deep soil. Modern practice is radically different. It is now agreed that the roots should not be set deeper than the natural depth of the surface soil. After plowing and harrowing, deep furrows are drawn preparatory to planting and it is generally necessary to use the shovel to secure the proper depth. The ground is then ready for the roots. One year roots are preferred by most growers although two year roots are often used. If the roots are grown at home at least twice as many should be provided as will be needed to fill the plat to be planted. This will permit of selection, a matter which is of the utmost importance. It has been frequently demonstrated that the strongest roots make the largest shoots so that it is never good business policy to plant weak roots. As the market wants large shoots it is important to select not only strong plants but those which contain large buds rather than many small ones. The observance of these two points will materially aid in securing large shoots as well as large yields. Cover the roots with not more than two inches of soil at first and then fill in the furrows gradually as the plants grow until the ground is level. A poor stand is sometimes the result of filling the furrows immediately after planting when many of the small shoots fail to reach the surface.

Clean tillage must be given the plantation for the best results. A cut-away or disk harrow is one of the best tools to use for early spring tillage and it may also be used to advantage after the cutting season. Spike tooth cultivators and a variety of tools are used in summer tillage. In the growing of green grass, ridging should be avoided as much as possible at all times.

The supply of humus in the soil must be maintained. Manure is generally applied in the fall after the tops have been mown. Ten to fifteen tons of horse or cow manure per acre makes a good dressing although intensive growers sometimes use thirty to fifty tons. If more convenient the manure may be applied any time during the winter. Whatever the time of application, the manure is disked or plowed into the soil the following spring. Commercial fertilizers should also be used with freedom. The most successful growers apply a ton or more. (For formula, see page 32). The entire amount may be applied before disking in early spring or half of it then and half at the close of the cutting season. The latter plan is probably the better. Quantities of nitrate of soda can also be used to advantage at the rate of 100 to 200 pounds per acre and applied at any time the plants seem to need additional food. The most marked effect is doubtless secured when nitrate is used at the close of the cutting season and for the following two months. It is generally desirable to make two or three applications at intervals of about three weeks.

Asparagus should not be cut the second year, although it may be permissible to cut the strongest shoots for a few weeks. It is a question, however, whether the loss is not greater than the gain. A safe plan is to do no cutting until the third year and then make the season not longer than six weeks. After the third year cutting may continue each year until about the first of July. Special knives can be secured for cutting the crop, although large, sharp butcher knives are entirely satisfactory for the green grass. It should be sorted into three grades for the city markets and tied into bunches to meet the requirements of the market to be supplied. Raffia or red tape may be used for tying and a special bunching device should be made or purchased. Both tape and buncher may be secured through seed supply houses. In cutting asparagus, everything should be removed even if the smallest shoots are discarded.

Rust is the only serious disease of asparagus. Mowing and burning the tops after they are matured help to control its ravages. The common asparagus beetle is the only serious insect pest. Spraying with arsenate of lead in young plantations and on lure rows in old plantations is the most approved method of combat. Air-slaked lime destroys the larvae and to some extent repels the beetles.

BEAN.

The different classes of beans are used in large quantities by the markets of Pennsylvania. Most of the soils of our State are well adapted to growing this crop. The best yields are secured on fertile, heavy loams and the limestone soils produce excellent crops.

Preparations for planting should be thorough. Rotten manure can be applied to advantage if the land lacks humus. Commercial fertilizer should also be used. As this plant is a legume, it is unnecessary to use more than one or two per cent. of nitrogen while it is usually profitable to apply eight or ten per cent. each of the mineral elements. The applications range from three hundred to one thousand pounds per acre.

Wax beans are of easy culture. Rust Proof Golden Wax is one of the best varieties, although there are many other excellent sorts. This class of beans may be planted earlier than the more tender classes as the limas. All beans are tender to frost and the seeds decay quickly if the soil is cold and wet. Market gardeners, however, often take chances in planting before the ground is thoroughly warm. If the beans rot the loss is slight and if they grow there is a decided gain in earliness. Wax beans and green-podded bush varieties, as the Red Valentine, may be planted in rows fifteen to eighteen inches apart and cultivated with a hand wheel hoe or planted two feet or more apart and cultivated with a horse cultivator. Deep planting is a disadvantage. An inch or two of fine, moist soil is sufficient covering and greater depth simply retards germination. If planted in drills the plants should stand about three inches apart. Thinning is practiced sometimes if the stand is too thick. Some growers claim that it is an advantage to plant in hills of three or four beans eight inches apart. A hoe can then be used between hills. Wax and green-podded beans are generally sold in upright half bushel baskets.

Lima beans require warmer soil, greater fertility and a longer season than bush beans. The seeds decay easily and should not be planted until the soil is warm and the weather settled. It is probably never desirable to plant them until at least ten days later than is considered safe for corn. The germination is then prompt and the growth rapid.

Pole limas are generally regarded superior in quality to Bush limas and many men of experience claim that although they are more troublesome to grow on account of providing poles, the profits are greater. Early Leviathan is an excellent sort for the cooler sections, while King of the Garden is a splendid later variety. Pole limas should be planted four by four. The poles should be seven or eight feet long and the bark left on to assist in the twining of the vines. Poultry netting also makes an excellent support for lima beans. If the plants are given good care they will bear profusely until frost.

Field beans should be grown more largely in this State. In many other sections of the country they pay better than wheat and improve the soil. The common pea bean is most commonly grown. It should not be planted before the 20th of May in most parts of this State. From one-half to three-quarters of a bushel of seed is required per acre. A bushel of the large beans, as the red kidney varieties, is not too much for an acre. Special planters are on the market or beans may be planted rapidly by ordinary eleven drill grain seeders with seven inch spaces between the tubes. All of the tubes are stopped except the second, sixth and tenth. The drill wheel follows in its outer wheel mark. Three rows will then be planted at a time and they will be spaced twenty-eight inches apart which is right for horse cultivation. Press wheels attached to the drilling hoes help to secure prompt and even germination as they firm the soil and regulate the depth of covering. Beans should never be cultivated when the plants are wet. It spreads disease and the plants invariably suffer if disturbed when wet.

The most destructive disease of the bean is "pod spot" or anthracnose. Various methods have been suggested for its control, but by far the most efficient means is to select and plant healthy seed. If pods absolutely free from disease are gathered there will be little or no trouble the following year. This is unquestionably the only practical and effective means to keep clear of anthracnose.

BEET.

The beet is one of the most profitable root crops when placed on the market early and it is also desirable to store for late fall and winter sales. It thrives best in the sandy loams although very nice roots may be grown in fairly heavy soils. Fresh stable manures should be avoided, but rotten manure may be used freely. A liberal supply of vegetable matter is essential to the best results and there is no better way to supply this than to make heavy annual dressings of rotten manure.

Beets are often started under glass and transplanted later to the open ground. The plan does not generally meet with favor among gardeners because it is not an easy crop to transplant successfully. If weather conditions are favorable and there is plenty of moisture in the soil the plants recover very quickly. With adverse conditions the plants are stunted and may not produce a crop any earlier than seed sown in the open.

Beets are generally cultivated with hand-wheel hoes having the rows from twelve to fifteen inches apart and the plants thinned from three to six inches depending upon the natural vigor and size of the plants from different varieties and also upon the size of the roots desired by the market. Three to four inches between plants is ample space for the early varieties.

Among the best early varieties may be mentioned Crosby Egyptian, Eclipse and Early Model. The roots of these varieties are rounded or globular and for this reason are often planted for the late crop. When wanted for fall or winter use the seed should be sown in June or early in July while early spring is the proper time to sow for the first marketings. Bastian's Half-Long Blood and Long Smooth Blood Red are popular late varieties.

BRUSSELS SPROUTS.

This is one of the many variations in the cabbage family. Instead of a single head at the top of the plant, a large bud or miniature cabbage head is borne in the axil of each leaf. A cluster of loose leaves constitutes the crown of the plant and the little heads are scattered along the stem which is generally about two feet high. The little cabbage heads are from one to two inches in diameter and are used boiled or pickled. The flavor is more delicate than that of cabbage. This vegetable is scarcely known in the smaller markets but it is quite popular in the cities. The culture is the same as for cabbage, although it does not seem to thrive so well in inland soils as near the seashore. The crop is most largely grown on Long Island and there is quite a demand for "sprouts" in New York. The baby cabbage heads are generally packed and sold in either one or four-quart baskets. They are placed on the market during the fall and early winter from sowings made in the open. The plants do not require more space than Jersey Wakefield cabbage. Long Island Improved is the most valuable variety.

CABBAGE.

Commercially, cabbage is the most important vegetable grown in this State. Both early and late varieties are produced extensively and find ready sale. Notwithstanding the large home production, many thousand tons are shipped into the State every year indicating that maximum production has not been reached. This is particularly true of winter cabbage. Practically the entire State is well adapted to the crop and we should, at least, supply our own markets.

Cabbage may be grown successfully on all the soils of the State. The warm, well drained sandy loams are better adapted to the early crop when quick maturity is important. Yields, however, are always larger on the heavier soils so that for the late crop the clay loams are preferred. Whether for the early or late crop a constant and abundant supply of moisture and a never failing supply of quickly available plant food are the essential factors. High fertility not only means large heads but also quicker maturity.

Of the first early cabbages, Jersey Wakefield is in the lead. It has been grown extensively for many years and with proper breeding will probably continue to be the leading early cabbage grown in the United States. Some newer varieties as Race Horse and Woods Early are making a splendid showing and should receive the attention of market gardeners. Following Jersey Wakefield, Charleston Wakefield is the most prominent variety. It averages probably a third larger and matures about a week later. The two varieties, however, seem to run into each other and it is often difficult to separate the types. Both the Wakefields are pointed cabbages. Winningstadt is another old variety which is still popular for the home garden and it is grown to a limited extent for market. Its quality is better than Wakefield although the core is larger. It is said to be a fair shipper.

Early Spring is a flat cabbage and ripens with Charleston Wakefield. A large and more solid heading variety of the flat type is Early Summer. There is no truer bred cabbage in America than Succession, but it is considerably later than Early Summer and the heads are also somewhat larger. For a mid-summer cabbage, nothing excels Succession and it is also exceedingly valuable as a late variety for soils which are not fertile enough to grow a satisfactory crop of still later varieties as Flat Dutch and Danish Ballhead. Succession is a certain header if it has even a fair chance. If planted in time it will head in poor soils, although the heads will be small.

The large, late heading varieties as Flat Dutch, Drumhead, Surèhead and Autumn King require early sowing and very rich soils for satisfactory results. This is also true of Danish Ballhead which is by far our best cabbage for winter storage. It is possible to grow a fair late crop of Succession where Danish Ballhead would be almost an entire failure. The Danish Ballhead is, as the name indicates, a very hard, round-headed cabbage and is universally grown when long keeping is desired. It is generally considered of superior quality, but if compared with flat cabbages will be found to be coarser in texture and not so sweet. It is an excellent cabbage, however, and should be grown more largely in Pennsylvania because of its long keeping qualities. It is especially adapted to heavy soils and the cooler portions of the State.

Volga is another comparatively new variety which deserves mention. It is crinkled in leaf, the heads rounded-conical but not so hard as the Danish Ballhead. It is a favorite variety with some growers and is adapted to limestone soils. Houser was originated near Harrisburg not many years ago. It possesses special merit in its power to resist black rot. It requires a longer season and perhaps more fertile soil than Danish Ballhead but seems to thrive in lighter soils and in warmer sections where Danish Ballhead does not do well. It is probable that Houser will become the most valuable long keeper to be grown in the southern part of the State.

For the early crop the seed should be sown at least ten weeks in advance of field planting, and better, three months. Ample time should be allowed in order not to force the plants too rapidly. If the seed is sown February 1 the plants should be ready for the cold frame March 1 and for the field April 15. Hardening should begin about April 1. The leaves should have a reddish blue tint, indicating hardiness when the plants are set in the field. They will then stand a temperature of ten to fifteen degrees below freezing.

The time to sow seed for the late crop will depend upon the locality and variety to be grown. In the northern and mountainous portions of the State, May 1 is about right for Succession and two weeks earlier for Danish Ballhead. With a very favorable growing season these dates are perhaps two weeks too early. It is better to sow early, though, than to take chances in sowing too late when a large percentage of plants may fail to make solid heads.

The most important factor in growing late plants is a sufficient amount of soil moisture for the germination of the seed. The sowing is always made in the open ground and it sometimes happens that the ground is too dry for prompt germination causing serious delay in starting the plants. To avoid this trouble the seed bed should be plowed early in the spring and harrowed often enough to conserve the moisture. A still safer plan is to plow and harrow in good time and then mulch heavily with strawy manure until time to sow when the mulch may be raked into piles or windrows and removed. The seed may be sown in drills or broadcast. The drill method is generally used, although broadcasting is preferred by some who claim that the individual plants have more space for their development and that they are stockier and stronger. Half an inch of soil is ample covering if the soil is moist. When broadcasting the seed is raked in lightly with a garden rake. When drilled the rows should be twelve inches apart. Thinning is always an advantage if the plants are crowded.

A thick clover sod, heavily manured provides ideal conditions for this crop. For the early crop it should be plowed in the fall and for the late crop early in the spring. The sods will then be partly decayed and in condition to do the crop the most good. Cabbage is a heavy feeder and it is scarcely possible to fertilize it too liberally. Some intensive growers apply fifty tons of manure per acre before plowing. Most growers, however, are unable to use such a large amount and usually consider themselves fortunate if they can apply fifteen tons per acre. If fertilizers are used with freedom, good crops of cabbage may be grown on sod land without any manure although manure is always desirable.

Fertilizer for cabbage should always carry not less than four per cent. of nitrogen which should be in the form of nitrate of soda for the early crop. The mineral elements are also needed and most growers apply not less than eight per cent. each of potash and phosphoric acid. It is desirable to apply the fertilizer before much harrowing is done and the materials then become thoroughly mixed with the soil. A handful of finely ground bone meal, dried blood or tankage, placed in each hill before setting the plant is an advantage in soils which have not been built up to a high state of fertility.

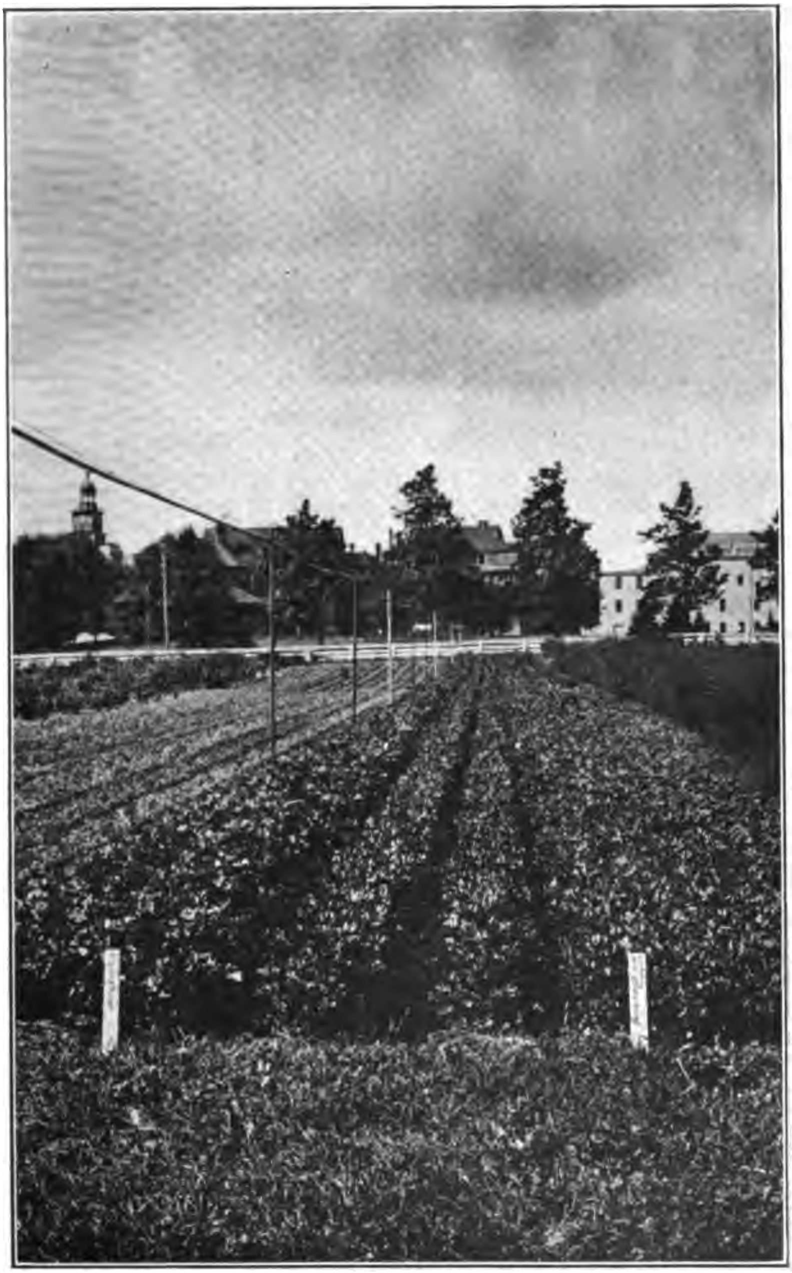


Fig. 15. Skinner's Irrigation and Celery Culture at the Pennsylvania State College.

Nitrate of soda applied as a top dressing from time to time is also valuable unless the soil contains a large amount of nitrogen.

Planting distances vary greatly, but the following may be used safely for most soils: Jersey Wakefield, 14x26 inches apart; Charleston Wakefield and Early Summer, 15x27; Succession, All-Head, All-Seasons, Early Flat Dutch and other varieties of this type and season, 18x28; Danish Ballhead, 20x30; Flat Dutch, Drumhead and other large late varieties, 22x34.

Machine planting, when properly managed, is entirely satisfactory and often better than hand-planting. When setting by hand a dibber or trowel may be used if the soil is loose, or the holes may be made with hand hoes. The most rapid hand-planting is accomplished by drawing furrows to the proper depth and dropping plants at the required intervals. The soil may be drawn in quickly with the hands from both sides and pressure about the roots firms the soil and secures the plant. The furrows should not be made much faster than the planting is done for the soil soon becomes too dry for safe planting except in damp cloudy weather.

In removing plants from flats or beds as much soil as possible should be kept on the roots. This prevents a serious check in growth and less time is lost in the plant becoming established in its new home.

Thorough tillage is always important for this crop. The cultivators should be started just as soon as the plants have straightened up and used frequently enough to conserve the soil moisture. Shallow tillage should be continued as long as the cultivators can be crowded between the rows. Breaking off an occasional leaf will cause little damage. Figure 16 shows a field of cabbage with very few vacancies.

Cabbage is marketed in a great variety of ways. It is often hauled in bulk to local markets and then sold out by the half-bushel basket, bushel basket, barrel or by count or weight. Selling by weight is the fairest method both to grower and buyer. The early crop when shipped is packed in crates or barrels. The Baltimore crate is ten by eighteen by thirty-six inches inside measurements. It holds, on an average, about one-third less cabbage than a barrel and generally sells for as much money. The crate is the best package to use in warm weather because of better ventilation. It also loads more compactly on the wagon. Small lots of late cabbage are shipped in barrels. Sugar barrels are well adapted to mid-winter shipments. If lined with paper and several thicknesses of paper placed over the top before covering with burlap, the cabbage can be handled in the severest weather.

Danish Ballhead cabbage in the large producing districts is usually stored in specially constructed frost proof houses. The crop

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may also be kept in cool cellars or pits. Burying is the most common practice in this State. If the cabbage is sound this method may be used with the loss of scarcely a head. The most economical plan is to bury in a field where the crop has been grown. If more convenient the crop may be hauled to ground near the buildings. It is not necessary to pull the plants as is generally done by home gardeners. It is far better to cut the stems, leaving stubs four or five inches long for convenience in handling the heads. Place the heads in long windrows up and down the slope of the land. Three or four heads may be placed side by side with the stubs down the hill. It is better to lay the heads on their sides than upside down because the outer leaves protect the under side of the head and the stubs do not extend above the soil and thus serve as conductors to carry the heat from the cabbage. Beginning at the upper side of a plant the windrows are continued as long as may be desired, and if crowded for space a row of two or three heads may be placed upon this layer of three or four. Not less than twelve feet should be allowed between windrows. In most sections the cabbage should be placed and ready to bury not later than the 10th of November, although Thanksgiving may not be too late for southern Pennsylvania. A two-horse plow is used to draw two furrows on each side of the windrows, finishing the work with shovels. The cabbage should be covered with about five inches of soil. As soon as convenient, three or four inches of manure is placed over the ridges and in the severest parts of the State it might be safer to use more soil as well as manure. This kind of protection will keep Danish Ballhead until the first of April although it is generally best to begin selling at least two months before this time. A large quantity may be removed on pleasant days and hauled to the barn or suitable outbuilding to be trimmed and packed ready for market. Burying is a troublesome way to handle cabbage but it keeps it in better condition than any other method.

Cabbage has a number of serious insect and disease enemies. The common green cabbage worm may be readily combated by the use of fresh powders as pyrethrum or Slug Shot. Arsenate of lead is also an effective poison when used as a spray. Maggots are often destructive. Their ravages are not so easily prevented. When known to be present, as indicated by flies (resembling the common house fly) flitting about the stems, carbolic acid emulsion should be injected into the ground around the stems.

Plant lice are also destructive some seasons. Dry weather seems to be particularly favorable for their breeding. Both tobacco decoction and kerosene emulsion are used as contact poisons to destroy plant lice on cabbage. The spraying must be thorough and it is necessary to spray the under side of the leaves as well as the upper.

Knapsack sprayers are the most effective for this work. The application of either material is slow and tedious but sometimes necessary to save the crop.

Black rot also causes heavy losses sometimes. The removal of diseased leaves and the application of spray materials are of no value. The only preventive measure is rotation, not planting on the same ground at shorter intervals than four or five years. This is the only safe course to avoid black rot, and also club-root, which is still more dreaded as a disease of cruciferous plants. Club root disease is a slime mould or low form of fungus and extremely difficult to eradicate when the land becomes infested. Liming is the best known preventive measure aside from rotation. It should be used in liberal quantities as seventy-five bushels of stone lime per acre and at least a year in advance of planting cabbage. It often fails to prevent further attacks although considered valuable by most growers. Diseased plants should never be planted and seed should not be sown in land which has grown a crop of cabbage in the previous eight or ten years.

CARROT.

Carrots are consumed quite largely in the cities of the State, but are in little demand in the smaller markets. With proper soil conditions and a good market it is a paying crop.

This vegetable thrives best in a deep, mellow, sandy loam. Sandy soils produce the straightest and smoothest roots. The ground should be made very rich by the use of rotten manure. Special care should be exercised to have the land free from troublesome weed seeds which may germinate before the carrot seed and cause great annoyance. The seedlings are very delicate and are easily smothered by weeds which have started first. Commercial fertilizers may also be used with freedom. Potash seems to be especially valuable for this root crop.

A large number of varieties are in cultivation. The smaller forms are planted for early use and the larger for late use and stock feed. Of the small early varieties, Golden Ball, Early Scarlet Horn, Oxheart and Chantenay are largely planted. Danvers and Long Orange are prominent late varieties. The early varieties may be sown later and are prized by some for fall and winter use. Improved Short White is a very large root, valued for stock feeding.

For the earliest marketings, seed should be sown in the open as soon as the ground can be prepared and successive sowings may be made until nearly the first of July. The seed germinates slowly and for this reason a few radish seed are often sown with carrots and the radish plants mark the rows so that cultivation may be

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started before the carrots are up. If the seed is good and the ground in proper condition from twelve to fifteen seeds per foot of row should give a good stand although the seed is sown much more thickly when small roots are wanted. Expense is saved by sowing just the right amount of seed and then thinning is not required. It is often necessary to thin and the plants may be left from one to six inches apart, depending upon variety, soil and size of roots desired. The rows may be only twelve to fifteen inches apart or more space may be allowed so that horse cultivators can be used.

In marketing, the roots are tied together in bunches the same as other root crops or they may be sold in bulk by the bushel or barrel. If the carrots are large, a convenient way to harvest is to draw a plow as near as possible to the roots when they can then be easily pulled and topped.

Carrots may be stored and sold during the entire winter. They will stand some frost, but severe freezing is injurious, so harvesting in the fall should not be delayed too long. The roots keep better if not too ripe when harvested. They may be stored in root houses, caves or well ventilated cellars. The best temperature for storage is slightly above the freezing point. If the atmosphere of the storage room is quite dry a covering of sand or loam will help to prevent withering and drying out.

CAULIFLOWER.

The markets of Pennsylvania are poorly supplied with cauliflower. The main reason for this is that it is much more difficult to grow than its close relative, cabbage. Early cauliflower is especially hard to grow because of the difficulty in raising the plants and the uncertainty of heading in warm weather. Notwithstanding these statements, quite large areas are grown in Philadelphia county and the crop is very profitable. The gardener must certainly be master of every detail in order to succeed.

It is quite generally believed that this vegetable does better at low altitudes where the air is moist and the nights cool. Long Island is by far the largest producing district in the list and the climate as well as the soil conditons there are considered unusually well adapted to the crop. Cauliflower is grown in a great variety of soils, but there is no doubt about the fairly heavy clay loams with gravelly subsoils furnishing the best conditions. The soil should be cool and moist and these conditions do not generally prevail in sandy soils. Irrigation is especially important for inland locations.

It is probably never desirable to apply fresh stable manures for cauliflower, but rotten manure should be used with freedom. The mineral elements should also be employed, but nitrogen should not be used too lavishly as there may be an excessive growth of leaves without proper head formation.

Although a number of early varieties are advertised by seedsmen, not more than two or three are worthy of attention. Snowball and Dwarf Erfurt have been the leading early varieties for many years. Snowstorm is also a popular early variety, especially for forcing. Seafoam is one of the best late varieties. It is probably also sold as Dry Weather cauliflower. There is no question about it being an unusually successful variety for inland sections.

Too much emphasis cannot be placed upon the importance of buying the very best seed. Much spurious seed is on the market and may be had at low prices. It pays to buy the best, however, although it may cost five dollars or more per ounce. To inferior seed is often attributed the production of "buttons" or the breaking up of the head before it has attained marketable size. Poor seed may also be responsible for non-heading which is most likely to occur in hot, dry weather.

Great difficulty is often experienced in raising early cauliflower plants. I do not know of any vegetable plant which is so likely to damp off in the seed bed or after transplanting. Special precaution must be taken to guard against this loss. Soil sterilization may prevent the disease but perfect cultural conditions are the only certain preventive measures. It is not easy to decide just when the plants should be watered or the house or frame ventilated. Unchecked plants or plants which are making an entirely normal growth probably seldom damp off. The general method of handling the plants is the same as for cabbage, although some growers prefer to transplant twice before setting in the field. In Philadelphia county most of the plants are started in the fall and wintered in cold frames. The plan is very successful. Late plants are grown from seed sown in the open ground, sowing at the same time as for late cabbage. The market desires snowy white heads so that protection is universally practiced to accomplish this purpose. Three methods are used: (1) The breaking of half a dozen or more leaves over the top of the cauliflower head. The stems of the leaves are not severed entirely so that the leaves remain green. This plan is more successful on Long Island than in Pennsylvania where there is a tendency for the leaves to regain their normal position, thus defeating the purpose. (2) Breaking or bending over the leaves as just explained and pinning with toothpicks or small pins. This is a very satisfactory method for all sections. (3) Bringing the leaves together over the head and tying. This is an excellent plan but requires more time than securing with toothpicks. The protection should begin when the heads are about an inch and a half in diameter.

Cauliflower is considered a delicacy on most tables and it pays to exercise special care in marketing. Although barrels are often used, crates or baskets are better. A package which will not hold more than a dozen or at most two dozen heads certainly has an advantage over barrels. If the heads are of good size, snowy white, wrapped in fancy paper and marketed in new, clean packages they cannot fail to attract attention and command good prices.

CELERY.

No vegetable finds more ready sale on the markets of Pennsylvania than celery. Enormous quantities are consumed in the cities and the smaller towns are supplied from the main distributing centers. Although generally grown throughout the State, our markets are mostly supplied by other states. It begins to arrive in July from regions where the early crop is a specialty. California finds it profitable to ship to our market as late as September when our home growers could readily supply the demand. Kalamazoo and New York send immense quantities, and in recent years Florida has been taking possession of our markets late in the winter. This great shipping industry from outside of the State shows the possibilities for growing celery in Pennsylvania. The region about Wellsboro, Tioga county, has been growing large amounts and there are further possibilities in that section. Our people consume large quantities and the crop possesses possibilities of great returns per acre. Few crops will make as much clear profit for area cultivated. It is also true that right cultural conditions must be provided to prevent a total failure. Its culture is now so well understood that every gardener should be reasonably certain of making the crop a success.

The climate of this State is entirely satisfactory for growing celery. Nearly all of our soils, with proper management, will grow a good crop. The reclaimed muck lands are universally regarded the best, considering the matter purely from a business standpoint. Such soils require only moderate fertilizing, are easily cultivated and seldom suffer from drouth. They abound in vegetable matter and this is the most important factor in any celery soil. It is upon this type of soil in all parts of the country that we find the extensive areas of celery.

The trouble on most soils is that drouth interferes so frequently that many gardeners are unwilling to plant large areas unless they are prepared to irrigate. Some gardeners, though, with skillful management, and upon soils that are not naturally droughty, are quite successful. When irrigation cannot be practiced, the grower should be very careful to conserve the natural supply of soil moisture by the early preparation of the soil, heavy annual manuring,

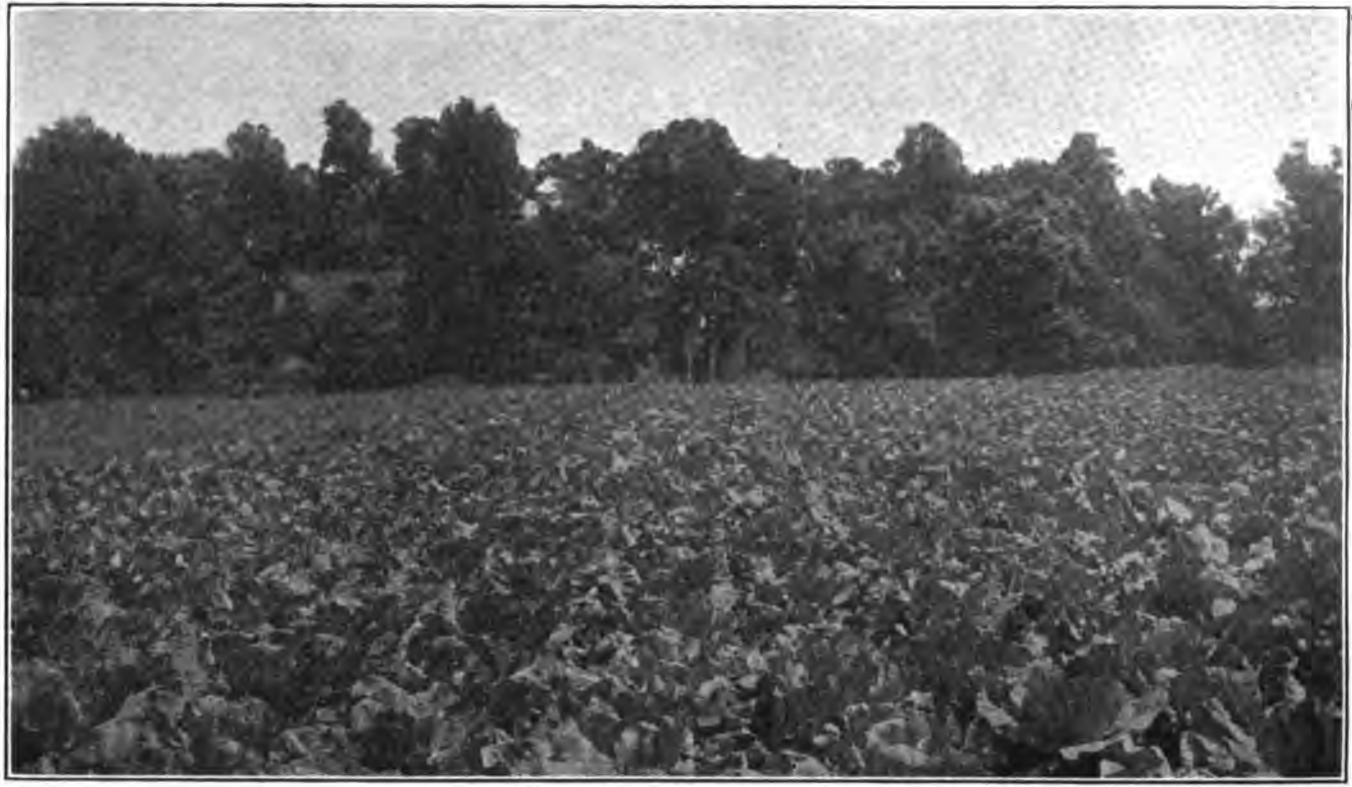

Fig. 16. Field of Early Cabbage.

frequent and thorough tillage and perhaps heavy mulching with manure. Celery is quite generally grown as a second crop following a variety of early crops which are harvested before it is time to plant celery. Market gardeners, following intensive methods, generally have very rich land abounding in vegetable matter which is in prime condition for late celery.

The necessity of high fertility has been previously indicated. Vegetable matter is important and there must be a liberal and constant supply of quickly available plant food. Stable manures are acknowledged to be the best fertilizers. They not only supply humus but also the elements of plant food. Growers following the most intensive methods use from twenty-five to fifty tons of manure per acre and this amount is often applied annually to the same land which is planted in celery every year. A prominent grower at Cleveland, Ohio, has been using fifty tons per acre for many years and his gross receipts have been averaging about $1,200 per acre. The safe policy is to plant no more ground than can be manured in the most liberal way. This will make more clear profit than two or three times as much land which is materially lacking in humus and plant food.

Some growers farming muck soils and using manure do not employ commercial fertilizers. The practice, however, is the exception and there seems to be no doubt that commercial fertilizers can be used in all cases to good advantage. When a gardener begins the use of fertilizers the tendency is to increase the annual applications rather than to decrease them. Very few of the intensive growers apply less than a ton per acre and many double this quantity. If manure is used at the rate of fifty tons per acre and supplemented with two tons of fertilizer it can be readily seen that the outlay for plant food per acre will exceed $100, which may seem excessive. The safe policy is to make certain in using enough manure and fertilizer but it is doubtful whether it is necessary to spend as much as the sum just named. Celery requires a large amount of nitrogen and the mixture should contain not less than four per cent. each of potash and phosphoric acid. Nitrate of soda is also considered exceedingly valuable when used as a top dressing at the rate of 100 to 200 pounds per acre. After the plants are established, nitrate may be used at intervals of about three weeks.

A long list of varieties are offered by the seedsmen, but the gardener need not consider more than half a dozen. Golden Self-Blanching is very generally grown. It is a good grower, easily blanched, compact and of fair quality. It is unquestionably the favorite among gardeners supplying the early market. White Plume is also popular as an early variety. It is larger and much more vigorous in growth than Golden Self-Blanching, but somewhat poorer in quality. When cultural conditions are not the best and when the market to be supplied is not too critical, White Plume should be planted.

Giant Pascal is a largely grown late variety of superior qualities. Winter Queen is also popular and of good quality. French Success is a newer variety of very compact growth. It is especially valued as a long keeper. Boston Market probably stands at the head of the list of late varieties for quality. It is dwarf in growth, very compact and the stalks small but exceedingly crisp, tender and delicious. It should be grown more largely for market and should always have a place in the home garden. Too much care cannot be exercised in buying celery seed. The best seed of the so-called self-blanching sorts is imported, while California produces excellent seed of the green varieties.

The demand for early celery is not nearly so great as for late. Cool weather seems to be necessary to create much of an appetite for celery, and yet there is an increasing demand for this vegeable during the summer. Prices are better for the early crop so that some gardeners find it quite profitable. There is a tendency for the plants to run to seed if at any time they are checked in growth so gardeners consider it unwise to sow much earlier than the first of March, because there is too much time from sowing until it is safe to plant in the field and the plants are likely to become crowded and stunted. If sown as early as the 15th of February, more space should be allowed the plants after they have been pricked out.

Celery seed germinates slowly and it is very important to sow in a fine soil which does not bake. Sow in drills an inch and a half or two inches apart and then cover the seed with fine soil. See that the soil does not become dry until germination is complete. The moisture may be easily conserved by covering with carpet, burlap or paper until the plants appear. Transplant when of the proper size, spacing the check rows an inch and one-half apart. The expert growers at Cleveland, Ohio, who have been mentioned, plant two by two inches on the greenhouse bench.

Plants for the late crop are usually started in the open (Figure 17) although some of the most successful growers start all plants under glass where there is absolute control of every condition. When grown in the open, the seed should be sown about the time apple trees are in bloom. The rows may be one foot apart which will be ample space to use the hand-wheel hoe. Be careful not to have the seed too deeply covered and the soil should be well firmed after sowing. Burlap, old carpets and various kinds of screens are sometimes used to conserve the moisture until the seeds have germinated. Clipping the tops when the plants get too tall is important to secure stockiness. If this is done at the time of transplanting, the plants

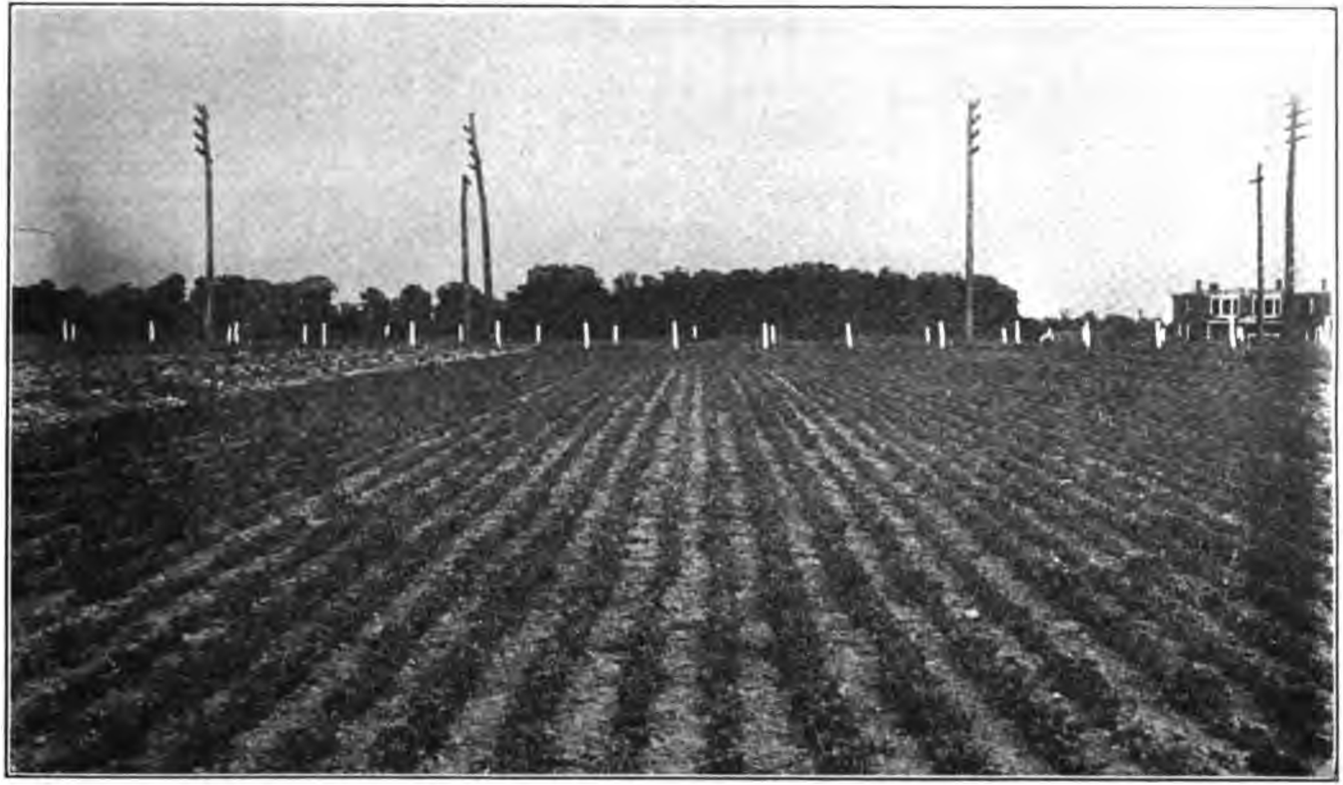

Fig. 17. A Plat of Late Celery Ready for Transplanting.

will suffer less and become established more quickly. Thinning in the seed bed is important if the plants stand closer than about half an inch. Anyone who sees the strong, sturdy late plants grown by transplanting cannot fail to be impressed with the superiority of this method over the usual plan which has just been described.

The space allowed between plants is determined largely by the amount of ground available for the crop and the system to be used in blanching. With the system known as the "New Celery Culture," the plants may be set as close as six by six inches or, better, six by twelve inches. At such close distances the self-blanching varieties become white enough to place on the market without further attention. This system offers great possibilities and yet it is not generally popular. The soil must be exceedingly rich and freely supplied with moisture. The plants are usually set in beds six to twelve feet wide with alleys between. Boards must be used along the outside of the alley rows to secure perfect blanching. This method without irrigation is rather uncertain for an immense amount of water is required when the plants are so close together. In wet weather when the atmosphere is hot and humid there is great danger of the plants rotting. This perhaps is the most serious objection to very close planting.

In some of the best and most successful fields of the country, the plants are set six by twenty-four inches. A horse may be used when setting at these distances, but generally hand-wheel hoes are used. Some very successful growers near Boston plant five by twenty inches. When the rows are two feet apart or less, soil cannot, of course, be used in blanching. The late crop, when blanched with soil, is usually set six or seven inches in the row and from four to six feet is allowed between rows, five feet being the most common space.

Celery should never be planted until after danger of severe frosts. The plants will stand some freezing, but there is danger of checking growth and causing them to run to seed. Plants for the late crop should be set as soon as they are large enough and soil conditions are satisfactory. The soil should be fine and the surface even. Guard against setting them too deep for the plants are easily injured if the hearts are covered.

There is probably no crop that will pay better to irrigate. A very successful plan is to plant six by twenty-four inches, or perhaps closer, and mulch at once with fresh horse manure at the rate of forty or fifty tons per acre. This will make a mulch three to five inches thick depending upon the character of the manure. At first the mulch should be thicker at the center of the row spaces and should not be allowed to come in contact with the plants. If necessary it may be leveled after the plants are larger. With the Skinner system of irrigation this is an ideal method. The liquid manure is conveyed to the roots and there is always plenty of moisture near the surface of the ground where the roots are feeding. See Figure 17, which shows a crop grown by this method. Where the ground is not mulched it should have frequent and thorough tillage.

Celery is subject to several fungous diseases which may become serious at any time. To avoid trouble and losses the most careful growers spray at frequent intervals with Bordeaux mixture. Some begin making application soon after germination, keeping the plants well armored against disease spores.

Boards are generally used to blanch the early celery as well as late when the rows are too close to permit the use of soil. It pays to buy sound lumber, hemlock being desirable. The boards should be cleated at each end to prevent warping and splitting. With good care they will last for fifteen years or longer. They should never be walked on in the field and when not in use they should be stacked or stored in the dry. Both ten and twelve-inch boards are used but a foot is not too great a width for large celery. Twelve, fourteen or sixteen foot boards are convenient lengths. In blanching, a board is placed along each side of the row and secured by stakes or more conveniently by hooks which are made from very heavy wire. They are simply placed over the upper edges of the boards, holding them firmly in place. Paper is also used in blanching early celery. It is wrapped about the plants and tied or secured with rubber bands. Any kind of fairly heavy brown paper will serve the purpose. A machine has been invented which is drawn by two horses and places paper on both sides of the row, followed by hillers which throw soil against the paper, thus holding it in place. When soil comes into direct contact with the stalks in hot weather they are likely to rust or discolor so that the above machine may find wide use among growers of early celery. Intensive growers who practice close planting cannot use it because of insufficient space between rows.

Earth may be used in blanching during the cool weather of the fall. Preparatory to hilling, "handling" is sometimes practiced, especially if the plants are spreading in habit of growth. This consists in drawing and pressing soil around the lower part of the plant making each stalk take an erect position. Hilling implements are then used frequently enough to keep the stems well covered.

If celery is to be trenched or stored the plants will keep better if not blanched. One of the best and most common methods of trenching may be described as follows: Attend to the work before the plants have been injured by hard freezing. Make trenches ten to twelve inches wide and deep enough for the plants to stand erect with the tops extending two or three inches above ground level.

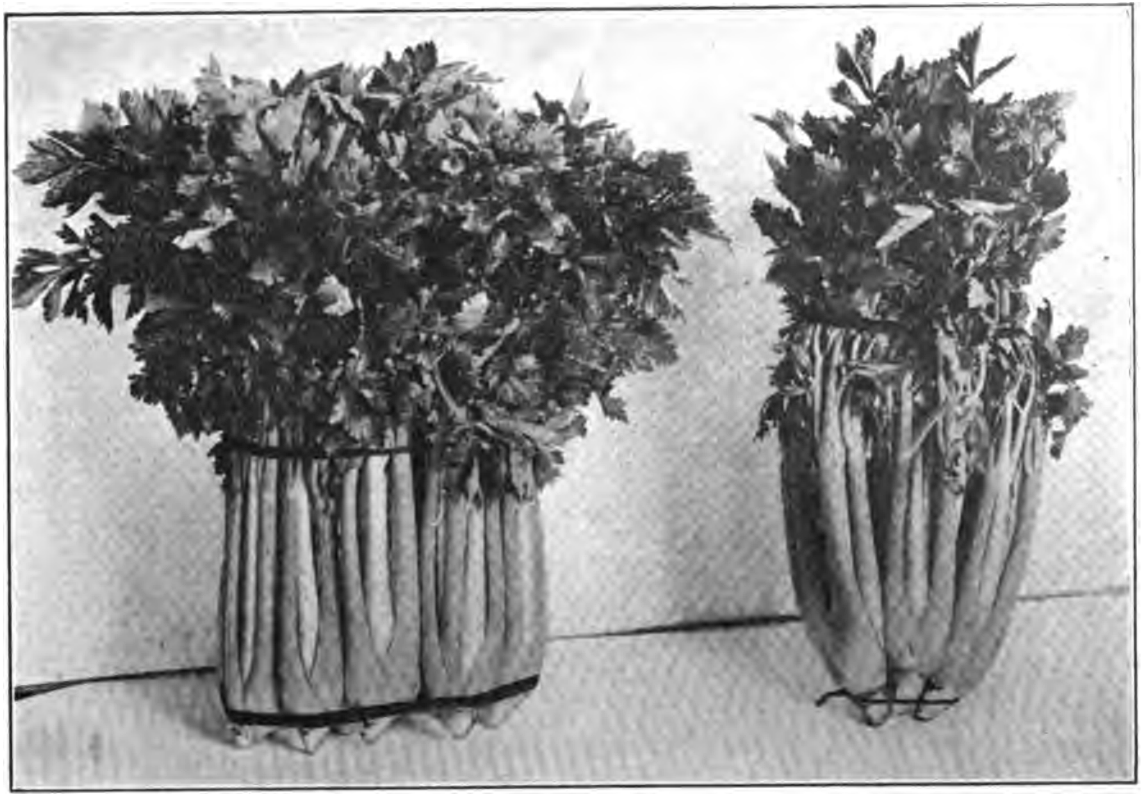

Fig. 18. Two common methods of bunching celery for eastern markets.

The crop is usually trenched in the field where grown, but if the drainage is not perfect select other ground. The plants must be dry for safe keeping. When trenching, the man stands in the trench with his back to the portion which is being filled. The plants are shoved back between the feet, packed close together and held in place by the legs and feet. The best protection is secured by nailing two ten or twelve-inch boards together making a trough which is placed over the plants as fast as the trench is filled. In warm weather, blocks or other support should be placed under the edges of the boards. As it gets colder the blocks should be removed and a little soil thrown along the bottom of the boards. As the weather gets still colder manure may be thrown over the boards increasing the depth as may be necessary. There is more danger, however, of losses from too little covering, and this is especially true for a few weeks after trenching. Special pits or storage houses are often used and are described in the books on celery culture.

Celery may be tied up in a variety of ways for marketing. Either blue or red tape makes the product appear much more attractive. A common plan is to tie three plants or four, if small, in a flat bunch, as shown in Figure 18. A very desirable method, also, is to tie in dozen lots, as seen in Figure 18. A great variety of crates may be seen on our markets. In general, they should be neat, attractive and not too large. It is better to supply retailers with small lots frequently so the plants will not become wilted or limp before sold.

CUCUMBER.

The cucumber is grown throughout the State for market purposes. It is not one of our most important vegetables from a commercial standpoint, although it is considered profitable by most truckers. It thrives in much colder sections than either watermelons or muskmelons and may be grown in a great variety of soils. Sandy loams doubtless furnish the best conditions, but the heavier soils produce excellent crops when properly handled.

The addition of rotten manure to most soils seems to be essential to the best results. This is especially true of clay soils. A shovelful or two of rotten manure in each hill or liberal distribution in furrows helps to secure large cucumbers and good yields. This special preparation is unnecessary in the sandy or lighter soils which have been built up to a high state of fertility. Land that receives liberal annual dressings of manure should produce a satisfactory crop when manure is spread in the usual manner.

A very common practice is to make raised hills in which the rotten manure has been thoroughly mixed with the soil. Level culture, however, is an advantage if the soil is warm and well drained. Some of the most extensive growers in the South who supply northern markets, open furrows with one-horse plows, distribute manure in the furrows at the rate of eight to ten tons per acre, plow back the furrows, and then mix with some implement, as a one-horse cultivator with most of the shovels removed. The planting is often done with a horse or hand seed drill, thinning the plants to stand about two feet apart. The rows are usually five to six feet apart. When planting in hills the distances vary as four by four, four by five, four by six and sometimes five by six. More space should be allowed in richer soils.

Commercial fertilizers are generally used in growing this vegetable. For formula, see table on page 32. The amount varies from five hundred to fifteen hundred pounds per acre. This may also be applied in the hill or furrow where it should be mixed thoroughly with the soil to prevent injury to the young plants.

Earliness is an exceedingly important factor in growing this crop. Home-grown cucumbers are wanted as soon as possible by our markets and it pays to make a special effort to produce them early. The plants are easily started under glass. The greenhouse or hotbed furnishes the best conditions. Sow not more than five weeks in advance of the time when the plants may be set in the field without danger of being killed or injured by frost. Earthen pots, paper pots, berry baskets, dirt bands, and inverted sods are employed for this purpose. Not less than three-inch pots should be used. Berry baskets cannot be excelled for starting cucumbers. The pots or baskets should be almost filled with any rich, loamy soil. Plant about eight seeds to each pot or berry basket to insure a good stand and then thin to the two strongest. Plants held in pots or berry baskets longer than five weeks are likely to become stunted and they may not fully recover when set in the field. By using one of the devices mentioned, transplanting may be accomplished without any check in growth.

Cucumbers may be marketed in baskets or crates of any convenient size. (See Bulltin 202 of the Pennsylvania State Department of Agriculture.)

White Spine is the most important variety on the market. Various strains are offered by seedsmen. After a grower has secured good stock, it pays to make careful home selection of cucumbers for seed purposes. Here, as in all other cases, the plant should be the unit rather than fine individual specimens selected in a promiscuous manner.

The striped cucumber beetle is the most destructive enemy. Various methods are used for its control. Fresh, air-slaked lime, sprinkled freely on the plants, is generally effective as a repellant unless the beetles are very numerous. Mosquito netting is often used as a covering. A successful gardener in this State recommends square frames six inches high and large enough to enclose hills. No mosquito netting or other cloth is placed over the frames. It is claimed that the beetles nearly always fly over the frames.

DANDELION.

Cultivated varieties of the common wild dandelion are grown to some extent for the city markets. The leaves are used mainly as greens and occasionally for garnishing during the spring and fall. Dandelion is an easy crop to grow. The seed should be sown in the spring as soon as the ground can be prepared. For hand cultivation the rows may be twelve to fifteen inches apart and the plants thinned to four to six inches. All flowers should be pinched off to prevent the production of seed. Nitrate of soda is an effective fertilizer for this crop.

EGG PLANT.

The fruit of the egg plant is not consumed in large quantities in the smaller markets, but it is an important vegetable in the large cities. It requires a warm soil, a warm climate and a long season to get best results. Now this does not mean that the egg plant cannot be grown satisfactorily in rather unfavorable locations for the skill of the cultivator makes it possible to modify conditions sufficiently to render it a safe venture. When climatic conditions are unfavorable the gardener should grow the finest plants in large pots and defer field planting until the first of June or perhaps later and the soil should be in the best possible condition.

Sandy loams are the best soils for the growing of egg plants. Heavier types should have liberal applications of rotten manure and of quickly available plant food. In other words the egg plant thrives best in light, warm, well drained, fertile soil. Special hill preparation is sometimes practiced but it is not necessary in good garden soils.

The leading varieties are Black Beauty, New York Improved, Black Pekin and Early Long Purple. The last variety named is especially valuable for cool sections. The fruits are much smaller than the standard late varieties but mature several weeks earlier. High temperatures in the greenhouse or hotbed are required in starting the plants. Seed should be sowed about March 1 in most sections and the plants shifted two or three times before setting in the field. Four-inch pots or berry baskets are excellent for the last transplanting.

As previously indicated, the plants should seldom be set in the open before June 1. The smaller varieties, as Early Long Purple, may be planted two by three feet while the larger growing plants should be spaced three by four or four by four. In order to secure large specimens a common practice is to pinch off all blossoms after four to six fruits have set. Clean tillage should be maintained at all times. Egg plants are marketed in baskets or crates of various sizes. They carry better in the smaller packages. The young fruits are edible and they are unsatisfactory for cooking when allowed to ripen.

ENDIVE.

Endive is not fully appreciated in this country. It should be generally grown for the home table and for market. The leaves when blanched are used for salad and both the blanched and unblanched for greens. The crop is most commonly used during the fall and early winter although it is also satisfactory as an early summer crop.

Endive is hardy to frost so the crop is well adapted to all parts of this State. It requires the same soil conditions as lettuce, requiring an abundant supply of humus and plenty of plant food in quickly available forms. Nitrate of soda, used as a top dressing, at intervals of a few weeks, is especially valuable.

The Green Curled Winter, White Curled and Giant Fringed are the leading varieties. The plants may be started early in hotbeds and greenhouses, transplanting to the cold frame or to the open ground. This makes it possible to mature a much earlier crop and to realize larger profits. Hardening is important before taking plants to open ground. It is more common, however, to sow seed in shallow drills in the open and thin so the plants stand eight to twelve inches apart. The late crop is started in July or August. Although the unbleached leaves are excellent for greens, the leaves should be well blanched when they are to be used for salad. Blanching makes the leaves more tender and removes the bitterness, and may be accomplished by any method which will exclude the light. One plan is to gather the leaves together and tie with raffia or strings which will not cut the leaves. Another plan is to cover the plants with boards. Large pots with the drainage holes stopped will secure thorough blanching. In the fall, plants are often lifted and stored in trenches, pits, sheds, cold frames or other places where the light can be excluded. It is important that the plants be dry when stored and kept dry while blanching to prevent rot. Decay is likely to begin soon after blanching if the plants are not disposed of.

HORSERADISH.

There is an increasing demand for horseradish roots in the cities and it is sold to some extent on all our markets. The plant is hardy and thrives wherever proper soil conditions are provided. The cultivator should strive to grow long, smooth, unbranched roots and this cannot be accomplished in poor, heavy, stiff soils. Ideal conditions are found in the deep, moist, sandy loams although the crop may be grown in any heavy soil which is well supplied with humus. While a constant supply of moisture is important, wet soils should be avoided. Rotten manure is unquestionably the best fertilizer. It should be supplemented by liberal amounts of the mineral elements.

Horseradish is often grown as a companion crop, but with favorable markets it is profitable to grow alone. It is easily propagated by planting the crowns, but this method is undesirable because it results in branched and crooked roots. The only approved plan is to plant pieces of straight roots which may vary from three to six inches in length. These may be bought from seedsmen or nurserymen. After a crop has been grown, the usual plan is to remove the small lateral roots to plant for the next years' crop. In trimming or cutting the roots, the upper ends are cut square and the lower ends slanting. They are quite uniform in diameter and this method of cutting enables the gardener to plant the right end up. The roots are cut, tied in bundles in the fall or when the crop is sold and then stored in sand or moist soil until time to plant in the spring.

The rows may be two feet or more apart and the roots twelve to eighteen inches apart in the rows. Three inches of covering is sufficient, although the roots are often set at a greater depth. When furrows are opened the roots are usually set slanting, but this is no advantage over an upright position, except that the roots remain in place until covered with soil. When grown as an inter-crop, a large dibber or bar is used to make the holes. The roots may be planted early in the spring as a second crop after peas or other early vegetables.

Horseradish should always be grown as an annual crop. If the roots remain in the ground more than one season the small pieces left in the soil when the crop is harvested may cause a great deal of trouble by growing among other crops in subsequent years. With small, permanent home plantations it is customary to dig the roots in the spring of the year; but in the large commercial fields a portion of the crop is generally lifted in the fall. The roots may then be sold or stored in sand in a cool, dry cellar or cave and disposed of during the winter. The balance of the crop should be harvested early the next spring. The grated roots when mixed with vinegar will keep indefinitely in sealed jars.

KALE.

This vegetable, which belongs to the cabbage family, is of no great commercial importance, although considerable quantity is sold on the city markets. It is most commonly grown as an early spring or late fall crop. The leaves are curled at their edges and the plants are sometimes grown purely for ornamental purposes. Their chief value is as greens and the leaves are also popular for garnishing, although not so desirable for this purpose as parsley. The climatic, soil and fertilizer requirements are the same as for cabbage.

The plants may be started under glass and transplanted in the open. The more common plan is to sow in the open ground where the plants are to mature, and then thin as may be necessary. The plants should have about the same space in the field as early cabbage. They are not easily injured by freezing and in the milder parts of the State they often pass the winter without much damage. The quality is said to be improved by frost.

KOHL-RABI.

This vegetable belongs to the cabbage family and is valued for its fine edible qualities. The part which is used as food is the turnip-shaped enlargement of the stem immediately above the ground. Kohl-rabi is prepared for the table in the same way as turnips, but it is more highly esteemed by housekeepers who are familiar with both vegetables. The vegetable is not generally known on the markets and it deserves wider acquaintance among all classes. The cultural requirements are practically the same as for cabbage. Rotten manure and fertilizer should be used freely. Quick maturity is important to secure the best quality.

The plants are often started early under glass and handled in the same manner as cabbage plants. The more common method is to sow in drills and then thin to four to six inches. Fifteen inches between rows is sufficient space unless a horse cultivator is to be used. The stems become woody if the crop is allowed to stand too long, so that sowings should be made at intervals of two weeks if a succession is desired. The best known variety is Early White Vienna. The same methods of storing are used as for the turnip.

LEEK.

This vegetable is clearly allied to the onion, but is milder in flavor. It is eaten raw, cooked and used for seasoning. The same cultural conditions are required as for onions. Seedlings may be started under glass, hardened, roots and tops cut back and the plants set in the open, as onions are handled.

Blanching makes the stems milder in flavor and more tender so the plants are sometimes planted five or six inches deep in furrows or in dibber holes. If necessary, ridging may be practiced to secure more perfect blanching. The seed may also be sown in the open, thinning to about two inches apart or closer if the plants are sold when quite small.

LETTUCE.

Lettuce is of great commercial importance in this State. It is grown largely in greenhouses, hotbeds, cold frames and in the open. The readiness of sale depends upon quality and season of year. It varies greatly in quality and is in greatest demand during the spring months.

Lettuce is sensitive to too much heat. The plants thrive best in a rich, moist soil. Rotten manure is by far the best fertilizer. It is often used for this crop at the rate of forty or fifty tons per acre. Commercial fertilizer carrying a high percentage of nitrogen can also be used to good advantage. It is customary with many growers to apply a ton or more of fertilizer per acre. High fertility and a constant supply of moisture secure quick maturity, large heads and heavy yields.

There are three general ways of growing it in the open: (1) To sow thickly in beds and cut the leaves back as wanted for the table. This method is common in home gardens but results in an inferior product. (2) To start the plants under glass and transplant to the open. (3) To sow in drills in the open and thin to the desired distances.

Of the compact heading varieties, Big Boston, May King, and All Heart are the leading varieties, although many others are recommended for field culture. All varieties of head lettuce require more porous or better aerated soils than loose heading varieties. They are also generally regarded as of superior quality. There are many good loose heading varieties but very few if any excel Grand Rapids, which is the leading forcing variety of its class. (4) Cos lettuce is a newer type which is attracting considerable attention. The leaves are long and narrow, tender and excellent in quality when grown in rich moist soils. It possesses a peculiar flavor which is very pleasant to many consumers. Several varieties are worthy of trial.

When started under glass for the early spring crop the seed should be sown about February 1, transplanting from the greenhouse or hotbed to the cold frame about March 1. If cold frame space permits, it pays to plant two by two inches apart. The plants should be well hardened before setting in the open ground which can be done with safety about as soon as the ground can be prepared. Twelve by twelve inches is about the right distance in the field unless a horse cultivator is to be used.

It is also common to sow just as soon as the ground can be prepared for a spring crop and in August for a fall crop. The rows may be a foot apart, thinning from eight to twelve inches. Lettuce should have thorough tillage. It may be marketed in crates, baskets or barrels. The flat, half-bushel basket or chip is perhaps the best package for this crop.

MUSKMELON.

The muskmelon or cantaloupe can be grown successfully in many counties of the State. Choice specimens sell readily at good prices in all our important markets. The greatest opportunity is to supply local markets unless competition is very keen from shippers. Muskmelons prefer warm, well drained soils and the sandy loams are best adapted to the crop. Clay soils which are not too stiff may be made to produce splendid crops by the addition of rotten manure. An open, porous soil is very important and special hill preparation is desirable when this condition does not exist. If rotten manure is not used in the hill, it may be distributed in furrows, mixed thoroughly with plow or cultivator and the seeds drilled in if desired. Eight to twelve tons of manure per acre applied in the hill or furrow should secure satisfactory crops. Commercial fertilizers are also employed in growing this crop. (See formula, page 32.)

A great many varieties are advertised by the seedsmen. Some of the best are Netted Gem or Rocky Ford, Emerald Gem, and Osage and Paul Rose for salmon fleshed sorts.

The seed may be planted in pots and the plants grown in the same way as explained for cucumbers on page 62. This enables the grower to reach the market earlier and makes it possible to grow muskmelons where the summers are too cool and too short to mature a crop.

Planting distances vary greatly. There should be at least five feet between rows and six give better conditions in fertile soils. The plants may stand from two to six feet apart in the row, depending upon the number left at each place and also upon the vigor of the variety. Spraying is often necessary to control diseases. The crop is marketed in baskets and crates of various sizes.

The muskmelon has not been grown on a very large scale in Pennsylvania, although a gardener here and there has found it a very profitable crop. There is no reason why it should not be grown extensively for all our markets. The plant thrives best in warm soils and on sunny exposures. Soils in which there is considerable sand are usually preferred; the crop is always earlier in such soils. Many growers are getting excellent results in clay loams when rotten manure is used in sufficient quantity. Special hill or furrow preparation as directed for cucumbers (page 62) is often necessary.

Varieties differ greatly in many respects. They vary in size, form, color and markings of fruit. The flesh varies from poor to very good in quality and from whitish to deep orange in color. Rocky Ford has come into prominence in recent years. It varies greatly in type. Netted Gem is an excellent, small, early variety. Montreal Market is the largest of the nutmeg varieties and is largely grown in Canada. Emerald Gem is a small, very early variety of superior quality. Tip Top is a nearly round melon with deep yellow flesh of good quality. Osage is increasing in popularity; fruits are large, round, with thick, sweet, salmon-colored flesh. Paul Rose is a superior variety secured by crossing Osage with Netted Gem.

Muskmelons may be started under glass as directed for cucumbers. (See page 62). An early start is even more important than with cucumbers. The plants must not be checked in growth before setting in the field. An excellent plan is to sow in beds in the hotbed or green house and pick out the plants when about ten days or two weeks old into two-inch pots. When roots begin to mat about the sides of the pots, shift into four-inch pots. This method of culture should avoid any possible check in growth before the plants are set in the open ground. In no case should the seed be sown more than five weeks in advance of field setting.

Muskmelons may be planted in furrows or in hills. The furrow method as explained for cucumbers (page 62) seems to be gaining in popularity. The rows should seldom be closer than five feet and six feet of space is not too much in most soils.

Tillage should be thorough at all times. Some hoeing and hand weeding in the furrows or hills is often necessary. The striped cucumber beetle is the worst insect enemy. For its control, see page 62. Spraying with Bordeaux mixture is frequently practiced to check the ravages of fungous diseases.

If the melons are for a local market, they should not be picked until fully ripe and not until the stem separates readily from the melon are they fully ripe. If for shipment, the fruits must be pulled rather green to hold up until in the hands of the consumer. Quality is always sacrified if the melons are pulled before they are thoroughly ripe.

ONION.

The onion ranks third in commercial importance among the vegetables grown in the United States. It is an important vegetable in this State near the cities, although there are very few large areas. The crop is profitable when conditions are favorable and there is no reason why it should not be grown much more extensively in Pennsylvania. Market prices fluctuate greatly from year to year but average prices are quite satisfactory.

The onion is widely adapted to a great many soil types, and soils which are not naturally congenial to the crop may be made productive by the liberal application of rotten manure. The sandy soil and sandy loams are unquestionably best adapted to onion culture. Such soils are easily cultivated and furnish ideal conditions for the free development of the bulbs. If the heavier types can be made open and porous by the proper addition of vegetable matter they will produce splendid crops, although the cost of production may be greater than on the lighter soils. Muck soils, when fully reclaimed, furnish most excellent conditions for this crop and the largest areas of onions in the United States are upon these soils. Whatever the character of the soil, the ground should be fairly level, well-drained and free from stones, sticks and other rubbish which would interfere with the use of drills, cultivators and other tools.

Soil, intended for onions, should be put in the best possible condition before planting. A good plan is to grow a hoed crop, such as cabbage, potatoes or sweet corn, the year before planting onions manuring very heavily and giving perfectly clean tillage. This method of treatment will increase the supply of humus and rid the soil of troublesome weed seeds. All stable manures used the same year the onions are grown should be decayed to avoid weeds and to secure the most satisfactory development of bulbs. A common practice is to apply rotten manure at the rate of twenty-five to fifty tons per acre, except in muck soils where commercial fertilizers usually take the place of manure. The fertilizer should carry four or five percent. of nitrogen, seven or eight percent. of phosphoric acid and eight to ten percent. of potash. Part of the nitrogen should be in a quickly available form, as nitrate of soda, or this salt may be used as a top dressing. One-hundred to one-hundred and fifty pounds at a dressing, applied at intervals of several weeks, should encourage a satisfactory growth. Onions are often grown on the same land year after year. While this may be the best policy from a business standpoint, rotation is highly desirable to keep free from insect and fungous trouble.

A large number of varieties are in cultivation. Among the American varieties, the following are grown most extensively: Yellow varieties—Yellow Danvers and Southport Yellow Globe; white varieties—Southport White Globe and Silver Skin; red varieties—Weathersfield and Red Globe. Of the large varieties which are adapted to the "new onion culture" but which do not keep well, the following may be mentioned; Prizetaker, Giant Gibraltar and Denia.

The bulk of the matured bulbs are grown from seed sown in the open ground. For this method prepare the ground at the earliest possible date in the spring and sow the seed without delay. Early sowing is certainly conducive to large yields. The seed is usually drilled in rows twelve to fourteen inches apart and sufficient seed should be used to give eight to ten plants per foot of row. The quality of seed required per acre depends upon the germinating power of the seed, size of seed, fertility of soil, size of onions desired and distances between rows. Four and a half and five pounds per acre are the most common quantities used by extensive growers. It is exceedingly important to test the germinating power of the seed before sowing so that the proper amount of seed per acre may be determined. The depth of covering should not be more than half an inch in fairly heavy soils, while an inch is not too much in lighter types.

In home gardens a few bushels of onions are often grown from sets. This method, however, does not appeal to commercial growers because of the expense in buying and planting sets and the crop is usually not as satisfactory as from seed.

The "new onion culture" is popular with a small percentage of our growers. Prizetaker is the best variety for this method. The seed is sown in the hotbed or greenhouse before February 1, if possible. Early sowing is important to secure strong, vigorous plants. The seed should be sown in shallow furrows two and a half inches apart. There should be an average stand of eight to ten plants per inch of furrow. The plants must be kept in a thrifty, growing condition to avoid damping off. If the soil is allowed to become very dry and then water is used with freedom, there will be great danger of losses from this fungous disease. Fresh air should be admitted to the hotbed or greenhouse every day. If the soil is fairly heavy, rotten manure and sand should be used in liberal proportions in preparing soil for seed sowing. After the plants are about five inches high, clip back the tops to four inches and repeat this operation once a week until the plants are set in the open ground. This will make them strong and stocky. The stems should be at least three-sixteenths of an inch in diameter when set in the field or garden. Previous to transplanting, shorten the roots somewhat and clip the tops back to three inches. Three by twelve inches is a favorite distance to plant. The plants should not be put out until after danger of severe frosts or freezes. They will stand some frost if well hardened, but severe freezing stunts the plants or kills them outright. When large bulbs of fine quality are grown, special methods should be used in marketing. The bulbs should be bright and clean and packed in special crates of the style in which Bermuda onions are shipped.

Onions are ready to harvest when at least half of the tops have turned yellow. The usual plan is to pull the bulbs in four or five rows and place in one windrow. The harvesting should be done in bright, sunny weather. The onions should be left in the field several days, turning daily with a wooden rake. They may then be cured in sheds, well ventilated lofts or in stacks of covered crates in the field. Onions should be stored in cool, dry, well ventilated buildings and the temperature should not drop below freezing unless the bulbs are frozen and held in this condition all winter or until sold or used.

Practically all market gardeners grow "bunching" onions or onions which are bunched and sold in the green state. They may be grown in a variety of ways. Varieties known as White and Yellow Multipliers are often planted in the fall six or eight weeks before freezing weather and these make very early onions for bunching the following spring. Pennsylvania is most too far north for the best results with Multipliers. When planted in this State the ground should be heavily mulched with manure late in the fall to insure safe wintering. A variety known as the Egyptian is perfectly hardy in all parts of this State. It may be planted at the same time as Multipliers. It is not of the best quality. Yellow, white or red sets are planted in large quantities early in the spring to be sold as bunch onions. A common method in some sections is to sow seed of standard varieties much more thickly than for fully grown bulbs. The quantity used varies from twenty to forty pounds per acre.

The production of onion sets is a profitable industry in some sections. The ground for this purpose should be as free as possible from weed seeds. Seed is sown early in the spring. The spacing between rows may vary from eight to fourteen inches. From forty-five to eighty pounds of seed is used per acre. Onion sets must be thoroughly dried before storing.

The growing of onions requires absolutely clean tillage. The weeds must not be allowed to get a start. The wheel hoe should be used frequently and some hand weeding is necessary to destroy weeds in the rows. The tool shown in Figure 13 is a very useful tool for this purpose.

PARSNIP.

The parsnip is one of our most valuable root crops. It is grown in nearly all home gardens and constitutes an important market crop. A long season and a deep, rich, moist, friable soil are the most important factors for its successful culture. Much straighter and smoother roots are grown in the sandy loams, but by the liberal application of rotten manure, excellent crops may be grown in heavy soils. Fresh stable manure of any kind should never be used for this crop. Half a ton or more of fertilizer per acre (formula given on page 32) will be an advantage, but rotten manure should be relied upon mainly to supply the needed plant food and also to secure the proper physical conditions of the soil. The leading varieties are Early Short Round, Guernsey and Hollow Crown. Seed should be sown in well prepared soil as early as possible in the spring. Early sowing is certainly one of the most important factors in getting a good crop. The seed germinates slowly. Sow thinly in rows not less than fourteen inches apart and thin plants to about four inches apart. Half an inch of covering is sufficient in most soils.

The roots are marketable as soon as they mature in the fall. Freezing improves the quality and for this reason most of the roots in home gardens are not dug until spring. Market gardeners should dig some of the roots in the fall before the ground freezes so hard that digging is difficult. They may be buried or stored in a dry, cool cellar. When stored in cellars, caves or pits, moist sand or soil should be thrown over the roots to prevent drying or shriveling.

PARSLEY.

Parsley is not grown extensively except in the vicinity of large cities. It is used for garnishing purposes as well as for soups, stews and other dishes. For an early crop, the seed should be sown when early cabbage is started or even earlier. The seed germinates slowly and the plants do not make rapid progress until well started. The methods used in starting early cabbage plants apply equally well for this vegetable.

It is also adapted to greenhouse culture. The plants may be easily forced on the bench or on solid beds. When grown under glass the plants may be set at the same distances as lettuce. They may also be used as border plants along tomatoes in the greenhouse or planted on the edge of benches. When grown in the open the rows may be a foot apart and the plants five or six inches apart in the row. A common practice is to sow thinly in the open, covering with half an inch of soil and thinning wherever it may be necessary. Dwarf Perfection, Fern-Leaved and Dark Moss-Curled are excellent varieties.

PEA.

The pea is generally grown in all of the home and market gardens of the State. Its early maturity, delicious flavor and nutritive value make it popular with all classes. Rather extensive plantings are required to secure any considerable quantity and for this reason the crop is not usually popular with intensive growers where acreage is limited. That is, the crop fits in better with trucking or farm gardening than with market gardening.

It is naturally a cool crop and thrives best in all sections when planted in the spring as soon as the ground can be prepared. Midsummer plantings are seldom successful. Earlier maturity is secured in the sandy loams, but the crop may be grown at a profit in all soils when properly treated. Open, porous soils are most friendly to the pea, so compact soils should receive dressings of rotten manure before planting. In very tenacious soils an application of rotten manure in the furrow is a decided advantage. Commercial fertilizers are not used in large amounts for this crop, although some of the most successful growers apply from five hundred to one thousand pounds per acre. For formula, see page 32.

Varieties of peas may be classed according to height into dwarf, half dwarf and tall. Another classification is the smooth or round seeded, the wrinkled seeded and the edible podded. The round, smooth seeded varieties may be planted as early as the ground can be prepared. The most largely planted of this class is Alaska and Nott's Excelsior. The wrinkled varieties should not be planted quite so early because the seeds do not germinate so promptly and the plants are not so hardy. Gradus and Thomas Laxton are largely planted. There are many other excellent varieties of both smooth and wrinkled sorts, dwarf, half dwarf and tall varieties. Melting Sugar is the standard variety of edible podded peas.

The distance between rows depends upon the height of the plants. Dwarf varieties such as Nott's Excelsior need not have more than sixteen inches if cultivated with a wheel hoe. Most of the dwarf varieties are planted in rows thirty inches apart. The tallest varieties, as Telephone, should be three feet apart. The dwarf varieties are much more popular with commercial growers because they do not require support. Peas should be planted at intervals of ten days to insure a succession. The earliest plantings should not be covered with more than an inch of soil, while as the season advances the covering may be increased to three or four inches. It pays to use seed freely. See table, page 84, for amount required.

PEPPER.

Peppers are becoming more popular on all markets. The large sweet fruited varieties are now in demand everywhere. The plant thrives best on warm soils and in sunny exposures. Earliness is an important factor in securing good prices. The plants may be started quite early in hotbeds or greenhouses. Seed may be sown February 15, making two shifts of the plants before setting in the open ground. Rather higher temperatures are required for growing plants than for tomatoes.

Neapolitan is a large, early fruiting variety highly valued by market gardeners. Its earliness renders the variety especially valuable for sections where summers are short and cool. Other large fruited sweet peppers are Ruby King, Bull Nose and Chinese Giant. Varieties with hot or pungent flesh are Tabasco Red Cluster, Long Red Cayenne and others.

RADISH.

The radish is one of the first crops to be sold in the spring. Sandy soils produce the smoothest and best formed roots although a satisfactory crop of the round or olive-shaped roots may be grown in any garden soil which has been made rich, loose and friable by the free use of stable manure. Rotten manure is much the best fertilizer that can be used for this crop. It is also greatly benefited in mid-summer by irrigation. There must be a full and constant supply of soil moisture to insure quick maturity and roots of high quality. The rows are generally a foot apart and the plants thinned from an inch to four inches apart, depending upon the variety. The depth of soil covering may vary from one-fourth of an inch to an inch. The grower should know the germinating power of his seed and adjust the drill accordingly. Very little thinning will be required if this matter is attended to properly. Radishes are tied into bunches for marketing.

The following are popular varieties: Round or turnip-shaped roots; Scarlet Button, Scarlet Globe and Hailstone. Olive and longer rooted varieties; White Chartier, Beckert's Chartier, Long White Vienna and White Strasburg. Winter varieties: White Chinese and Scarlet China. Seed of winter varieties should be sown about the middle of August in most sections.

RHUBARB.

As an early spring crop, rhubarb is highly valued and is profitable wherever market conditions are favorable. The plant thrives best in deep, rich, loamy soils. Rotten manure should be liberally applied before planting and commercial fertilizer may also be used to advantage. (See formula, page 32.) The plant is usually propagated by dividing the roots. This may be done late in the fall although early spring division and planting is preferred by most gardeners. Quite a common plan is to divide roots in the fall using the large ones for forcing in hotbeds, steam heated frames or greenhouse and ths smaller ones for field planting the next spring. Planting distances vary greatly but three and a half by four feet is satisfactory in most soils. Clean tillage should be maintained.

Two varieties are in cultivation, namely, Victoria and Linneas. The former is more thrifty in growth while the latter, often called Strawberry, because of the pink leaf stalks, is of better quality.

To keep the rhubarb in a thrifty condition, the ground should be heavily mulched with manure every fall and this manure cultivated into the ground early the following spring. Commercial fertilizers and nitrate of soda may be used to advantage. The stalks are tied in bundles for marketing.

RUTABAGA.

This root requires the same soil and cultural conditions as the common turnip. The rows should be about thirty inches apart and the plants thinned to about eight inches apart. Purple Top Swede is the leading variety. The seed should be sown a month earlier than late turnips to insure full maturity before cold weather. The roots may be stored or buried in the same manner as turnips.

SALSIFY.

This vegetable is not appreciated by most families. It is valuable for both soups and stews. The cultural conditions are the same as for parsnips. Seed should be sown as soon as possible in the spring in deep, rich soil. A full season is required to secure large roots. The rows may be twelve to sixteen inches apart and the plants thinned to about three inches. The roots may be left in the ground all winter or a portion of the crop removed late in the fall to be used or sold during the winter. If stored in the cellar, cover lightly with moist sand or soil to prevent withering.

SPINACH.

This is one of the most popular vegetables used as greens. It is grown most extensively in the South where the seeding is made in the fall and the plants wintered without protection. In the North the more common practice is to sow in early spring, just as soon as the ground can be prepared or in cold frames where the crop is matured. Fall sowing, however, is practiced sometimes in the North and the plants usually winter without much injury if the beds are mulched with two or three inches of strawy manure. The crop requires a moist, fertile soil and rotten manure should be used in large quantities. Nitrate of soda is particularly valuable in hastening maturity and in increasing yields. The rows are generally far enough apart to cultivate with a horse although the drills may be only a foot apart when a wheel hoe is to be used. The seeds should be covered with about an inch of soil and about three dozen seed per foot of drill. If there are too many plants, thinning may be practiced. Many growers do not thin until the plants are several inches high when they can be sold. The hardiest varieties should be used for fall sowing.

SQUASH.

The squash requires the same cultural conditions as the muskmelon. It thrives in deep, sandy loams, liberally fertilized with rotten manure. A common practice is to mix several shovelfuls of rotten manure in each hill before planting.

If earliness is important the plants may be started under glass as explained for cucumbers. (See page 62.) This makes it possible to reach the market three or four weeks earlier than when the seed is sown in the open. The distance between hills should be determined by the fertility of the soil and by the vigor of the variety to be planted. The distance for running varieties varies from six by eight, to ten by twelve feet.

There are many excellent varieties of squashes. For summer use, Mammoth White Bush and Yellow Summer Crook Neck are largely planted. The standard fall and winter varieties are Hubbard and Boston Marrow.

Squashes intended for storage should be harvested before severe frosts occur. This is essential to long keeping although early harvesting is often neglected. They should also be handled with care to prevent bruising.

SWEET CORN.

This crop is largely grown by the farmers of the State who have stock to utilize the fodder and thus prevent a waste. An excellent plan is to make ensilage of the fodder as fast as the crop is marketed. In some sections sweet corn is grown extensively for canneries. Soils which will produce a good crop of field corn will grow a successful crop of sweet corn. Heavy clover sods, liberally manured and fertilized furnish ideal conditions for sweet corn.

Prices for sweet corn are usually determined by its earliness. A few days often make a great difference in the price received. Earliness is such an important factor with some growers that glass is used in starting the plants. Berry baskets, earthen pots, dirt bands and paper pots may be used for this purpose. Whatever the desire, there must be no checking of growth, previous to, or at the time of planting in the field. The plan is of doubtful value unless there is assurance of much better prices than from direct field plantings. A southern exposure and sandy loams are important factors in producing an early crop. It is also important to plant early, even at the risk of losing the first planting. The cost of seed per acre is a relatively small matter.

Size of ear is an important matter. Most markets prefer large ears. High quality is also of great importance. Some of the most successful growers use fertilizer at the rate of one ton per acre. This outlay is justifiable if other conditions are favorable for maximum returns.

Many growers plant so as to secure a succession of corn for marketing. This may be accomplished by planting early, mid-season and late varieties at the same time or by making successive plantings of the same variety at intervals of ten days or two weeks. One of the most successful growers in this State has been using the same variety for many years and he sells sweet corn from the 10th of July until killing frosts prevent maturity. All of the seed is grown in a special breeding plat. With this plan, the variety is kept pure and it can be bred up to the highest standard of excellence.

The dwarf early varieties may be planted in rows just far enough apart to get between with a horse and cultivator, while the later and ranker varieties should have not less than three and one-half feet between rows. Plants of the early varieties may stand eight to ten inches apart in the row while later varieties should have about twelve inches of space in the row. The question is often asked, Does it pay to remove the suckers from sweet corn? According to the results of experiments and the experience of practical growers, there is some advantage in removing suckers and the gain in yield and size of ears will more than pay for the labor required to do this work.

Among popular early varieties, may be mentioned Crosby Early, Adams Extra Early, First of All, White Cob Corry and Premo. Second early—Golden Bantam and Metropolitan. Late—Zig-Zag or Country Gentleman and Stowell Evergreen. The last variety is a heavy producer and grown largely for the canning factories. Golden Bantam, although not so early as some other varieties, is highly valued because of its superb qualities. It is quite generally conceded to be of the highest quality of any variety in cultivation. The grains when ready to use are of a creamy yellow color. This color is objected to by some consumers but when they discover its superb quality the objection to color is usually withdrawn. The plants are productive and the ears of medium size.

SWEET POTATOES.

The sweet potato is not an important crop in this State. It requires a long season, well drained soil containing considerable sand and continuous warm weather. The tubers are bedded in sand in the hotbed or plant house and the rooted plants set in the open after danger of frost. For long keeping the tubers must be stored in a warm, dry, well ventilated room.

SWISS CHARD.

Swiss Chard is not generally known among market gardeners and consumers of vegetables. It is used for greens and may be grown successfully in all soils which have been properly enriched. It is enormously productive and of excellent quality.

A soil which will grow a good crop of beets or spinach will produce Swiss Chard successfully. The plants may be stored under glass and transplanted to the open quite early in the spring although this is probably never done on a commercial scale. In the starting of plants under glass they should have the same general treatment as cabbage.

The usual plan of culture is to sow in the open as soon as the ground can be prepared. The rows may be from fourteen to thirty inches apart. The plants may be cut back to the heart bud over and over again and a new growth will be quickly made. Nitrate of soda is exceedingly valuable in growing this crop. The leaves may be cooked as spinach and other greens and the stalks may be cooked and seasoned like asparagus and served on toast. This vegetable is gaining in popularity. It should be much more generally grown.

TOMATO.

The acreage of this vegetable annually planted in Pennsylvania is probably nearly equal to that of cabbage. It is one of our best vegetables for field culture and it offers possibilities for intensive culture on small areas although it is quite generally regarded as a field rather than a garden crop. Profits usually depend more upon earliness than upon any other factor while yield is exceedingly important, especially if grown for canneries or for the late market.

The climatic conditions of the State are generally favorable to the tomato. It is true that in the northern and mountainous counties the summers are rather short and cool for the highest yields. Improvements in varieties have made it possible, however, to grow a full crop in every section. If early varieties are selected and the plants started under glass and other necessary cultural conditions provided, practically every tomato will ripen in all sections before danger of killing autumn frosts. In many of the more unfavorable sections splendid local markets offer inducements to make a special effort in growing early tomatoes.

Deep, moist, sandy loams are considered ideal for the growing of this crop; but the finest specimens and the largest yields may be grown in all types of soil. Early varieties, as Earliana and June Pink, require light soils to secure fruits uniform in shape, while with late varieties, as Stone, the character of the soil does not exert so much influence upon the shape of the tomatoes. The crop is grown at less expense in soils which are easily cultivated and the tomatoes will be earlier in the sandy or sandy loams. Another advantage of sandy soils is, that the fruits require less cleaning in preparing for market.

Clover sod land furnishes the best conditions for the crop. The ground should be plowed early in the spring. Applications of rotten manure before or after plowing will increase the yield, especially if the land is somewhat thin. If the soil will not grow a good crop of corn it is too poor to grow a full crop of tomatoes. When necessary to grow them under such conditions and where there is a scarcity of rotten manure it will pay to use the available manure in the hills or furrows rather than broadcast it. Commercial fertilizers may also be used to advantatge in amounts varying from five hundred to one thousand pounds per acre. (See page 32 for formula.) If the land has been highly manured for a previous crop it may be judicious to use not more than two percent. of nitrogen and in some instances it is better to omit nitrogen. A liberal growth of vine is necessary for a full yield but excessive growth should be avoided. Fresh stable manures should never be used immediately before planting.

Earliness is a most important factor in making the crop pay. A bushel in July is often worth as much as four or five in September. Early sowing, hotbeds and greenhouses, right selection of varieties and proper methods of culture help to accomplish this purpose.

Earliana is by far the most extensively grown early variety. The fruit is red, quite solid and the vines enormously productive in good soils. Chalk Jewel is a better shaped red tomato, ripening a week later than Earliana. The vines are more vigorous in growth and highly productive. Stone is the standard late red tomato, while Matchless is slightly earlier and fully as desirable in all other respects. Of the pink and purple varieties, June Pink, Globe, Beauty and Trucker's Favorite will give a succession of fruits from July until November.

For the earliest tomatoes, seed should be sown not later than February 20 in the hotbed or greenhouse. Plants from this sowing will be ready to prick out four weeks later. They should be set one and a half by one and a half inches or better two by two inches if there is sufficient space. Three weeks later the second shift should be made, using flats, berry baskets, earthen pots, paper pots, dirt bands, or other convenient devices. If flats are used or the plants set on benches or in solid beds, not less than four inches should be allowed between plants, and five or six inches will secure stronger plants. For the main crop the grower usually feels that he cannot afford to allow more space than four or five inches, while it may pay to give a small percentage of the plants more space so as to get a lead on the market with the earliest fruit. Berry baskets and four-inch paper pots are most excellent in starting strong plants. If each plant carries a cluster of flowers and perhaps a few green tomatoes when set in the field there will be no uncertainty about an early crop if the cultural conditions are satisfactory. For the late crop the seed is often sown the middle of March in this State, but at least two weeks earlier is an advantage in securing a large yield and the bulk of the crop will be harvested before killing frosts occur.

Planting in the field should not begin until after danger of destructive spring frosts. Ten days later than the earliest date for planting corn is usually a safe rule. If strong, stocky plants have been grown, worth twenty dollars or more per thousand, it does not pay to take chances in losing the crop by setting in the field too early.

Planting distances should be determined by the variety grown, the fertility of the soil and the system of training. On moderately fertile soils, Earliana should be planted three by four feet, while four by five is not too much space in fertile soils when the vines are untrained. Four by four is the most common distances for planting. It pays to plant in check rows so the plants may be cultivated both ways.

Single stem training is popular with a few growers. It is claimed that the fruit ripens earlier and is more uniform and less susceptible to rot. Tillage may be continued longer, the fruit picked with greater ease and less cleaning is required in preparing for market. All lateral buds or shoots are pinched out as soon as they appear and the plant trained to a single stem and tied to a stake or wires. This method is largely used at Marietta, Ohio, but is not so popular in this State. The plants may be set two by four feet or even closer. This system involves greater expense in providing posts and in attending to pruning and tying. Another method of training, is to plant two by four feet and to tie up all vines without any pruning. This makes it possible to plant double the number of plants per acre and the yield per plant is apparently almost as great if not altogether.

When wanted for shipping, tomatoes should be picked when they begin to show color. When sold in local markets they should be well colored. Better quality is secured when fruits are allowed to ripen on the vine. After the season is well advanced the fields should be picked every other day to avoid loss from over-ripe tomatoes. The pickers should be cautioned not to remove faulty specimens from the vine and to handle the tomatoes with care. If prices are good the stems should be removed and the fruits thoroughly cleaned before packing. Dipping the tomatoes in water should be avoided if possible for it always softens the fruits and also bruises them to some extent. Careful and tasteful arrangement in attractive packages helps to secure quick sales at good prices. Tomatoes should never be placed in packages that hold more than half a bushel and six basket carriers should be used for the earliest fruits. Bulletin No. 202 by the State Department of Agriculture gives additional information on the marketing of tomatoes.

TURNIP.

This crop is grown on almost every farm and in most of the market gardens of the State. It may be grown cheaply and the roots usually sell at about the same prices as potatoes. The soil and fertilizer requirements are the same as for radishes. (See page 32.) The sandy loams furnish best conditions and produce the finest roots although excellent turnips are grown on almost all soil types.

For the early crop seed should be sown as soon as the ground can be prepared. Rows may vary from twelve inches to thirty inches apart. Seed should not be sown so thickly that much thinning will be required. With the early varieties, the grower should aim to produce a turnip about every two inches, while four or five inches is not too much for the larger late varieties. Late turnips are very commonly sown broadcast early in August. It is a simple method of culture but results in a larger percentage of small roots than when grown in drills, when the ground can be cultivated and the plants thinned.

Red or Purple-Top, Early White Milan, Early White Egg and Early Flat Dutch are popular early varieties. Purple Top, White Globe, Red or Purple Top and Large Yellow or Amber Globe are excellent for late planting.

THYME.

This is a pot herb which is quite largely grown in Philadelphia county. It is of easy culture. The seed may be sown in the spring after danger of heavy frosts or it may be propagated by rooted layers or divisions. The rows are usually far enough apart to cultivate with a horse. Pick the leaves and tender tips as wanted for market and dry enough to meet the winter demand. Figure 19 shows a fine plat in Philadelphia county.

WATERMELON.

The directions given on page 76 for squashes apply equally well to the growing of watermelons. The crop requires a longer season, warmer weather and warmer soil than squashes. In many parts of the State, if any attempt is made to grow this vegetable, the plants should be started in hotbeds or greenhouses. With an early start the crop should make satisfactory returns whenever soil and market conditions are favorable.

A long list of varieties are offered by seedsmen. The following are some of the best: Fordhook Early, Kleckley Sweet and Halbert Honey.

ROTATION.

In the growing of vegetables, it is desirable to rotate the crops as much as possible to avoid possible losses from insects and diseases and for other advantages. It is true that certain crops as onions and celery, are often grown on the same land for many years without rotating with any other crop and there are many instances where this is unquestionably the best business proposition. As a general principle, however, the advantages of rotation should not be overlooked especially with crops that easily become infested with insects or disease. Closely related plants as cabbage and cauliflower and all other cruciferous plants subject to club root, black rot and other diseases which are difficult to control, should not follow each other. It is also less difficult to control weeds when rotation is practiced.

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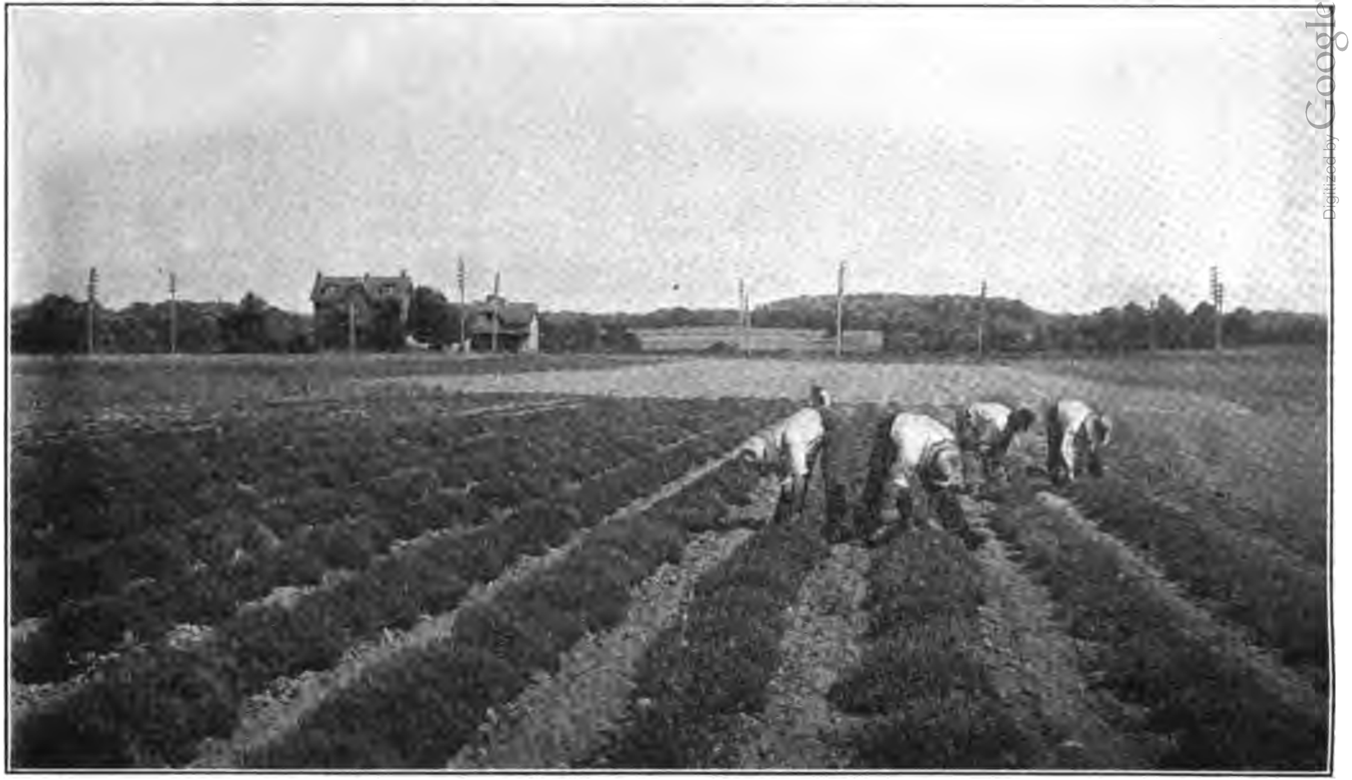

Fig. 19. Harvesting a Crop of Thyme.

SUCCESSION CROPPING.

Succession cropping is quite generally practiced in market gardening. That is, with high fertility and skillful management three to five crops may be grown upon the same ground in one season. This is intensive gardening and is practiced on land of high value where the area is too limited for more extensive methods, The smaller and quickly maturing crops, as lettuce, radishes, onions, beets, turnips and spinach are grown in succession cropping. For example, lettuce is started under glass and set in the open as soon as the weather will permit. The crop will be sold in May or early in June in the vicinity of Philadelphia. Radishes may follow and beets may be planted after the radishes are sold. With good soil the beets will come off in time to start spinach. The method and order of cropping varies greatly in different sections. If the grower is familiar with varieties and knows the required time for each to mature he should have no difficulty in working out a cropping plan. High fertility, prompt planting, thorough tillage and prompt marketing are essential to make succession cropping a success. Overhead irrigation is especially valuable in this type of gardening.

COMPANION CROPPING.

It is often possible and desirable to practice companion or intercropping as well as succession cropping. Almost innumerable combinations may be made. One very popular plan is to set early cabbage as soon as possible in the spring planting lettuce at the same time or perhaps slightly later.

The arrangement would be as follows, C representing cabbage and L lettuce and the figures planting distances expressed in inches.

	C	8	L	8	C	L	C	L	C
14									
	L	8	L	8	L	L	L	L	L
14									
	C	8	L	8	C	L	C	L	C

The lettuce will be harvested first so there will be practically no interference of the two crops. A row or two of early radishes are sometimes planted between the cabbage rows and occasionally both lettuce and radishes are used as companion crops with cabbage.

Dwarf peas may be planted early in the spring in rows four and a half feet apart, and at the proper time a row of tomatoes may be planted between the peas. The peas should give a return of abut $50 per acre. When the vines are cultivated into the soil the land will be in better condition for the crops that follow.

When the rows of sweet corn are four feet apart a row of beans may be planted between. If care is exercised in harvesting the corn and fodder an excellent crop of late beans should be secured.

The fifth row of onions when planted one foot apart is sometimes removed and sold for bunching and celery planted instead. The other four rows are allowed to mature and after harvesting, all of the ground is given to celery, there being ample space for blanching with earth.

These combinations are merely examples of companion cropping. This system does not appeal to some gardeners. They claim that tillage is more troublesome and that it is more difficult to harvest crops and to combat various insect and fungous enemies. Where the grower is limited in land available for cultivation, he is much more likely to resort to methods of inter-cropping.

NUMBER OF PLANTS REQUIRED PER ACRE AT VARIOUS DISTANCES.

1 in. x 10 in.—627,279.
1 in. x 12 in.—522,720.
2 in. x 10 in.—313,632.
2 in x 12 in.—261,360.
3 in. x 12 in.—174,240.
4 in. x 12 in.—130,680.
6 in. x 12 in.— 87,120.
12 in. x 12 in.— 43,560.
12 in. x 15 in.— 34,848.
12 in. x 18 in.— 29,040.
12 in. x 24 in.— 21,780.
12 in. x 30 in.— 17,424.
12 in. x 3 ft.— 14,520.
12 in. x 4 ft.— 10,890.
12 in. x 5 ft.— 8,712.
15 in. x 18 in.— 23,232.
15 in. x 2 ft.— 17,424.
15 in. x 3 ft.— 11,619.
15 in. x 4 ft.— 8,712.
15 in. x 5 ft.— 6,969.
18 in. x 20 in.— 17,424.
18 in. x 2 ft.— 14,520.
18 in. x 30 in.— 11,616.
18 in. x 3 ft.— 9,680.
18 in. x 4 ft.— 7,260.
18 in. x 5 ft.— 5,804.
2 ft. x 2 ft.— 10,890.
2 ft. x 3 ft.— 7,260.
2 ft. x 4 ft.— 5,445.
2 ft. x 5 ft.— 4,356.
3 ft. x 3 ft.— 4,840.
3 ft. x 4 ft.— 3,630.
3 ft. x 5 ft.— 2,904.
4 ft. x 4 ft.— 2,722.
4 ft. x 5 ft.— 2,178.
5 ft. x 5 ft.— 1,742.
5 ft. x 6 ft.— 1,452.
6 ft. x 6 ft.— 1,210.
6 ft. x 7 ft.— 1,037.
6 ft. x 8 ft.— 907.
7 ft. x 7 ft.— 888.
8 ft. x 8 ft.— 680.

QUANTITY OF SEED REQUIRED PER ACRE.

Asparagus, 2½ ounces to 100 feet of drill; 2 pounds should produce enough roots to plant an acre.

Beans, dwarf, 1 quart to 100 feet of drill; 1¼ bushels per acre. Lima, ¾ bushel to an acre. Pole, 1 pint to 100 feet drill; ½ bushel per acre. Soup beans, ½ bushel to ¾ bushel per acre.

Beet, 1 ounce to 50 feet of drill; 4 pounds to an acre.

Broccoli, 1 ounce to 300 feet of drill; 2 ounces per acre.

Cabbage, 1 ounce to 300 feet of drill; hotbed or greenhouse 1 ounce should produce at least 2,000 plants; outdoors, 1 pound should produce at least 20,000 plants.

Carrot, 1 ounce to 100 feet of drill; 2½ pounds to an acre.

Cauliflower, 1 ounce should produce 3,000 or more plants.

Celery, 1-3 ounce to 100 feet of drill; 1 ounce should produce at least 10,000 plants.

Sweet Corn, ¼ to ½ pint to 100 hills; when planted in hills 1 peck to an acre.

Cucumbers, 1 to 2 ounces to 100 hills; 1 to 2 pounds to an acre.

Egg Plant, 1 ounce should produce 1,500 to 2,000 plants.

Endive, ¼ ounce to 100 feet of drill; 4½ pounds per acre.

Kale, 1 ounce to 300 feet of drill.

Kohl-rabi, 1 ounce to 300 feet of drill; 4 pounds per acre.

Leek, 1 ounce to 100 feet of drill; 4 pounds per acre.

Lettuce, ¼ ounce to 100 feet of drill; 3 pounds to an acre.

Melons, musk, 2 ounces to 100 hills; 4 x 4 feet, 2 pounds to an acre.

Onion, seed, ½ ounce to 100 feet of drill; 4 to 5 pounds per acre. Sets, 1 quart to 40 feet of drill; 8 bushels, and more, if large, per acre.

Parsley, ½ ounce to 100 feet of drill; 3 pounds to an acre.

Peas, 1 to 2 pints to 100 feet of drill; 1½ to 2½ bushels per acre.

Pepper, 1 ounce should produce 1,500 plants.

Radish, 1 ounce to 100 feet of drill; 10 to 12 pounds per acre.

Rhubarb, 1 ounce of seed to 125 feet of drill; 3½ pounds to an acre.

Salsify, 1 ounce of seed to 100 feet of drill; 8 pounds to an acre.

Spinach, 1 ounce to 100 feet of drill; 3-16 pounds to an acre; broadcast, 30 pounds to an acre.

Squash, summer, 4 ounces to 100 hills. Fall and winter, 8 ounces to 100 hills.

Tomato, 1 ounce of seed should produce 3,000 to 4,000 plants.

Turnip, 1 ounce to 200 feet of drill; 1 to 2 pounds to an acre.

Commonwealth of Pennsylvania.

DEPARTMENT of AGRICULTURE

Bulletin No. 202

Marketing Horticultural Products

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By PAUL WORK

Instructor, Department of Horticulture, Cornell University,
Ithaca, New York

HARRISBURG:
C. E. AUGHINBAUGH, PRINTER TO THE STATE OF PENNSYLVANIA
1911

(Courtesy L. I. R. R. Experimental Farms.)

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PREFACE.

It is one thing to produce a good crop of anything grown upon the farm, and quite another thing to place it upon the market in such condition as to be able to secure the most satisfactory price. While this is true as a general proposition, it is especially true of horticultural products. There are few things more attractive than a basket of clean, well graded potatoes or tomatoes or a nice bright bunch of celery or carrots as they are seen in the market; but a poorly assorted basket or bunch of vegetables of any kind offends the eye and repels the buyer.

Realizing that skill in marketing counts for as much, and possibly more than skillful cultivation, arrangements were made with the author, who has made a close study of the question, to prepare a bulletin giving information upon the subject, which it is hoped may prove helpful to those lacking experience in this line.

N. B. CRITCHFIELD,
Secretary of Agriculture.

Fig. 1. All happy here. (Courtesy Prof. R. L. Watts.)

MARKETING HORTICULTURAL PRODUCTS.

CHAPTER I.

INTRODUCTION.

The success of the modern commercial horticulturist depends upon his mastery of two distinct arts, the art of Production, and the art of Marketing. Each is essential, and yet their problems differ so widely that we seldom find a man who can truly be said to be expert at both. Indeed, many of our leading growers have come to a realization of the fact that either line is sufficiently complex to engage all the energy and ability of a single man, and they have so planned their operations that the whole work of marketing is delegated to specialists, even including gathering from the field. But with most this is not possible, with many, perhaps, not profitable, and so it falls to the lot of nearly every grower of fruits or vegetables to work out for himself the solution of the problems involved in deriving the greatest possible return from the produce which he has succeeded in coaxing from the soil.

Perhaps, before taking up a detailed consideration of marketing methods, it may be well for us to trace some of the factors and conditions that have brought the business of selling from a matter of simple barter to a complex science as difficult and as important as the science of production. In decades past our population was by no means so densely housed as today. A large proportion of our people were possessed of at least a kitchen garden and a few fruit trees, which were ample to supply their limited demands by way of horticultural products. As our cities grew, the garden passed and the urban dweller looked about him for a new source of supply. A few nearby farmers saw an opportunity to increase their income of ready cash by setting aside a portion of a field for a few rows of lettuce, beans, or radishes, or for the planting of several fruit trees whose produce should be taken to the housewife of the city. The marketing of such involved no serious problems, but before many years passed, complications began to appear. The cities became larger and larger. The town garden became more and more rare. Other farmers saw the opportunity and general farms became market gardens and orchards. Large quantities of produce were to be handled and systematic methods became necessary. Competition became a factor and success answered only to the man who had good goods well graded and attractively packed.

Meanwhile, the demand for fresh foodstuffs grew and the region within driving distance of the city was no longer able to feed it. The railroads must be called upon to aid in the transportation of perishable produce, and the grower must not only have good goods well graded and attractively packed, but it must be so packed and handled as to stand shipment. The ever-growing demand for produce, out of season as well as in season, together with the exceptionally favorable conditions found in some sections, have served to increase the average length of haul. Thus, still more careful packing as well as shipment in refrigerator cars has become necessary.

We are, then, ready to grant the ever increasing complexity of the problem which confronts the horticulturist in reaping the profits of his ability to successfully till the soil. Shall he grow for local or distant market? Shall he retail his goods or sell through middlemen? Shall the wagon be replaced by the more modern auto-truck? What form of package will best serve his trade? Had grading and packing best be done in the field or in a packing house? These and countless others are the questions that he must answer and answer correctly.

In the outset certain general principles, some of which have already been suggested, may be laid down. First, the aim: To derive the greatest possible profit from the products of the farm. Then we may mention five prime considerations which lie beneath the practice of successful marketing.

1. High quality of goods. This is rather in the province of the horticulturist as producer, and it will here be discussed only so far as it is subject to conditions imposed after ripening.

2. The condition of the goods when it reaches the consumer. Nothing is gained by selling high grade produce to the buyer at the home station if that produce is to become worthless in the hands of the middleman.

3. Appearance. An attractive package with fruit well displayed is one of the best advertisements, commanding the attention and the admiration of the prospective buyer.

4. Economy. It is the difference between gross receipts and cost that feathers the farmer's nest. If a fancy package raises the cost as much as it raises the selling price, nothing is gained. And yet, very

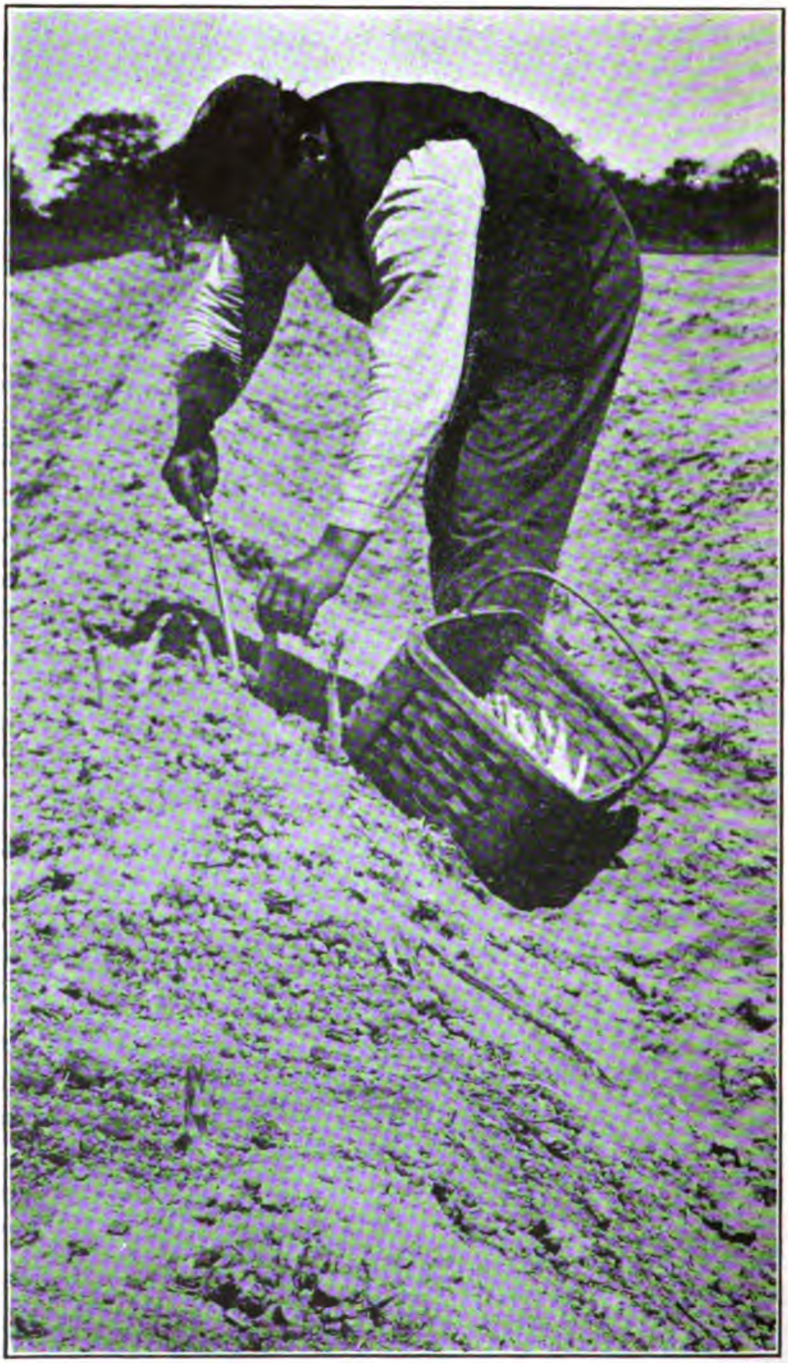


Fig. 2. Cutting asparagus on Long Island.
(Courtesy L. I. R. R. Experimental Farms.)

few producers can tell the cost of a package of fruit or vegetables as it leaves the farm. Good accounting is as important to the farmer as to the manufacturer.

5. Alertness in finding the most favorable market. It often happens that one market is glutted with a certain product, while another, not two hundred miles away is offering fair prices.

The subject of Marketing naturally falls under three heads, Preparation, Transportation, and Disposition. It will now be our aim to take up each of these in detail, showing the principles that govern and the factors that are to be considered in solving the problems that arise in connection with each.

CHAPTER II.

PREPARATION.

GENERAL CONSIDERATIONS.

The horticulturist is coming to realize more and more the importance of effective organization of his forces in every phase of his work. At no time is this more important than when produce is being gathered and prepared for market. Time is precious and the crop is perishable. Labor is scarce and expensive. Every move must be made to count. This result is only accomplished when every man fits properly in his place, neither overworked nor loafing.

Closely associated with good organization are convenience and method. Many an hour can be lost in packing with equipment that is not adapted to the work in hand, or that is awkwardly arranged. Every unnecessary motion in handling fruits or vegetables costs.

Careful handling is essential. This is one of the most difficult ends to attain in preparing goods for disposal. There is hardly a gang but includes one or more who insist on dropping apples a foot to the bottom of the barrel, or on squeezing tomatoes too tightly in the basket. Bruises may not appear at once, but the retailer sees a great difference between the carefully handled and the carelessly handled packages. This is a point that must be watched at every stage of the work, in picker, sorter, and teamster.

GATHERING FROM THE FIELD.

Fruits and vegetables must be gathered at the right time. They ripen and soon begin to deteriorate. Fields of such crops as asparagus, early cabbage, tomatoes, berries, and most of the market garden crops should be gone over three or four times a week, selecting the specimens that are just right. Sweet corn, watermelons, peas, and beans may be gathered less frequently. A few, as celery and late cabbage are sometimes entirely harvested at one cutting. Most of of the tree fruits are, in common practice, gathered at one picking, though many of the most progressive growers favor two or more pickings, even for winter apples. The Tyson Brothers, extensive fruit growers of Adams county, Pennsylvania, find that the removal of early maturing apples permits those which remain to gain materially in size and color.

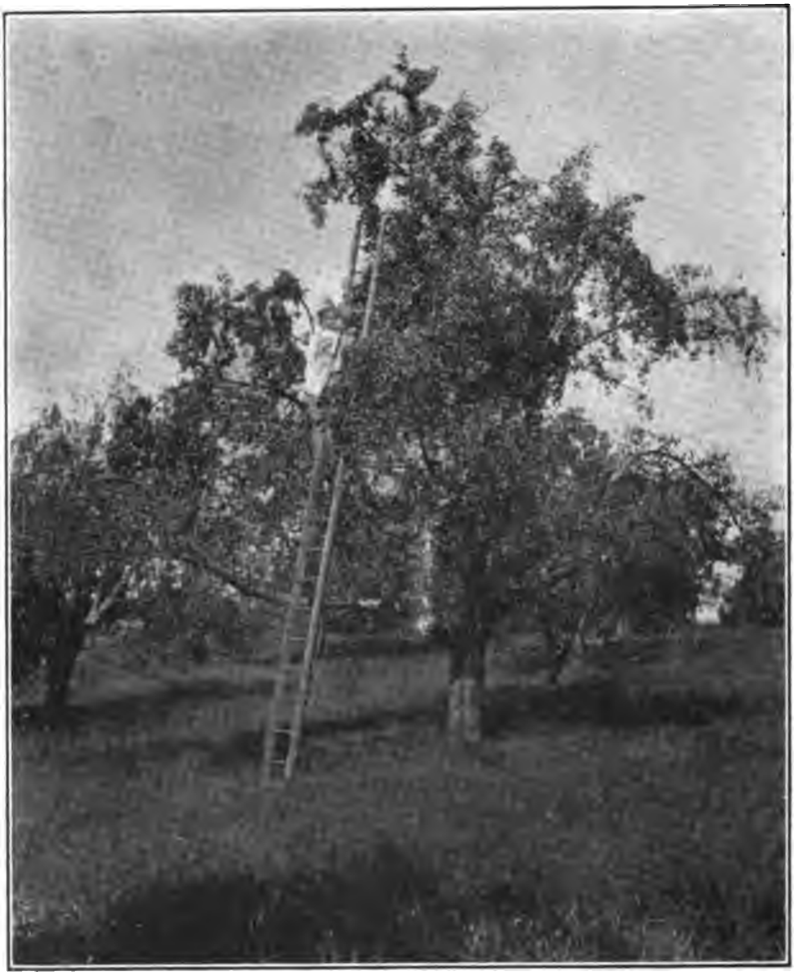


Fig. 3. In the newer orchards ladder-picking is reduced to a minimum by heading trees low.
(Courtesy Prof. J. P. Stewart.)

Vessels for picking should be carefully selected. The capacity should be such as to make a convenient load, but not so great that the lower layers will be damaged by the weight. The inside should be smooth to avoid bruising, a point at which many of the coarse oak baskets in common use fail. The handles should be broad and convenient, but not in the way. The vessel should be cheap so that many may be used, thus avoiding dumping. A round bottomed half-bushel basket made from thin flat strips is a favorite for both fruits and vegetables, answering well to the requirements just mentioned. Large wheelbarrows such as appear in the background of Figure 1 are much used for gathering green vegetables. Bushel baskets serve for the same purpose.

Low heading of trees greatly facilitates the work of gathering fruit. Much may be reached from the ground and very long ladders are unnecessary. In some orchards a plank is laid between two ladders. The three-legged step ladder of Figure 4 is stable, convenient, and easily handled.

Many ingenious devices for picking fruit have been patented, but most of them are of little value in the commercial orchard. Bags are generally regarded as being unhandy and as unduly bruising the fruit, although they are used by some extensive growers. The round-bottomed half-bushel basket mentioned above is handy and may be let down to the bottom of a barrel before emptying.

PACKING SHEDS.

Shall produce be graded and packed in the open or in temporary sheds in the field, or shall it be taken to a permanent, well equipped, and centrally located packing house? There are many points to be considered in answering this question. Practice differs widely under different conditions, in different sections, and with different crops. No definite rules can be laid down.

The first factor to be considered is the amount of washing and handling necessary to prepare the crop in question for market. Watermelons require none. Tomatoes are often washed, graded, wrapped, and packed in baskets, and finally crated. In the first case a second handling would be useless, in the latter, a suitable house greatly facilitates the work. Hauling to the shed involves extra handling, but on many farms soft or steep roads prevent final loading in the field. When produce is packed in the field it must be amply protected from the hot sun.

On the farms of Mr. Horace Roberts, of Moorestown, New Jersey, not a basket leaves for market without going through the packing house. On his home farm he has erected a house that is a model of convenience and compactness. Figures 5 and 6 show the general plan. The basement is used for washing peas and beans, for bunching asparagus, and for storing potatoes. The main floor is about four feet above the roadway on the side where the low wheeled farm wagons are unloaded and about five and a half feet above the level of the loading drive. The floors above are used for the storage of baskets and crates, which are bought by carloads.

Mr. Roberts uses broad, low platform wagons for hauling from the field. The low front wheels permit short turns and the broad tires improve rather than injure the farm roads. About fifty five-eighth bushel baskets are carried without stacking. Such a wagon soon pays for itself in convenience and in labor saved. Muscle used in lifting to a high platform or over an ordinary wagon bed is not well invested.

WASHING.

Most growers agree that washing is to be avoided if it is possible to make the produce attractive without it—this on grounds of cost and of damage incident to the extra handling. On the other hand some contend that there are few crops with which washing does not pay in giving a bright, fresh appearance. The necessity of washing depends upon contact with the ground, upon the nature of the soil, and upon the weather. Roots and salads almost invariably require a bath, while tomatoes and eggplants are often best brightened by a quick rub with a cloth, or even with the bare hand.

Many methods of handling root crops are in vogue. Most growers pull and load on wheelbarrows, washing in the packing shed before tying. About Wilkes-Barre it is a common practice for the puller to carry a bunch of strings in the belt, tying the onions or beets as they are gathered. The bunches are afterward washed with hose and brush.

Peas and beans are brightened and freshened by washing. Shrinkage on the way to market is avoided by packing wet.

Asparagus is sometimes carefully washed before bunching, but the practice of Mr. C. C. Hulsart, of Matawan, New Jersey, is quite satisfactory. As the "grass" is unloaded from the wagon which has brought it from the field, each handful is quickly dipped in a tub of water. The finished bunches are then thoroughly scrubbed.

When tomatoes require washing they are best emptied into a tub of water, gently stirred about with the hand, and lifted out with a sieve. They are sometimes wiped with a cloth before packing, though this is only necessary with clayey soils.

A number of forms of special apparatus have been devised to facilitate the work of washing vegetables. Probably the commonest is a metal-lined trough with faucet and hose connection. Mr. H. B. Fullerton, of the Long Island Railroad Experiment Station, tacks a quarter-inch mesh over the trough and washes almost entirely with hose, as shown in **Figure 7.**

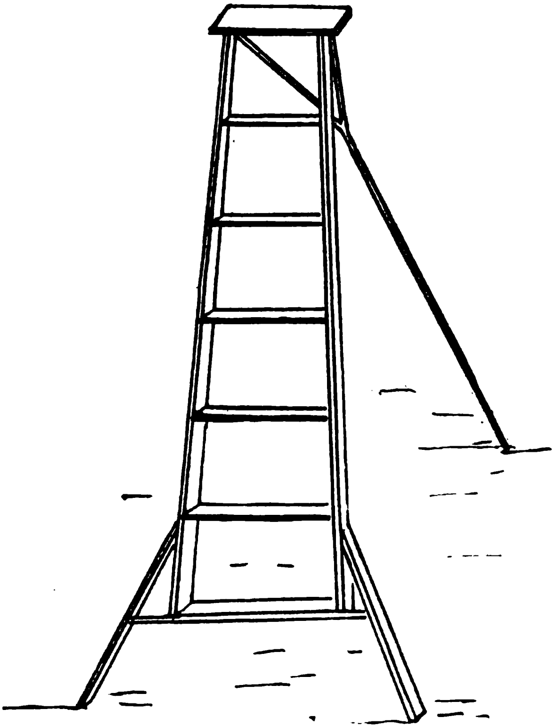


Fig. 4. A ladder for the orchard.

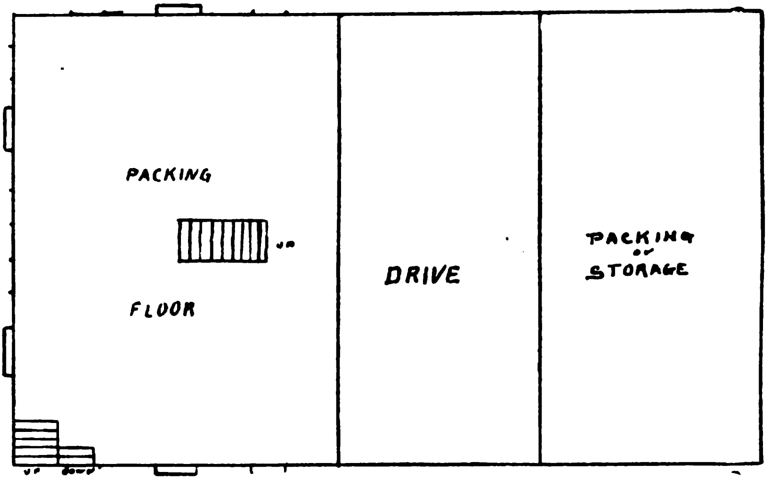


Fig. 5. A New Jersey packing house. First floor plan.

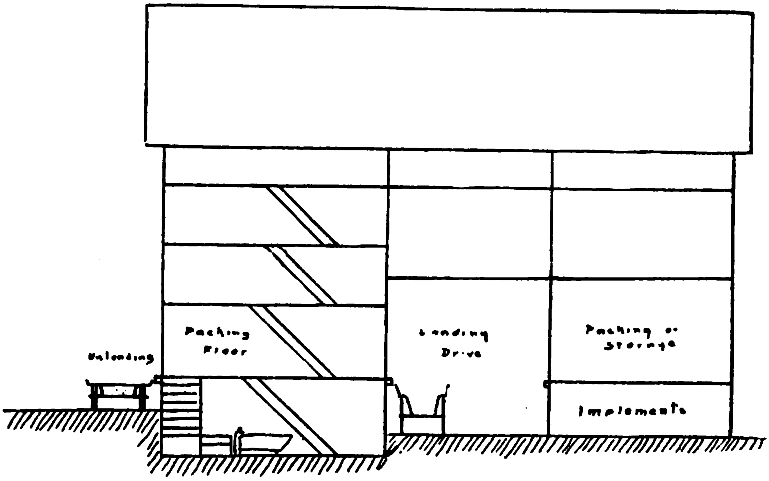


Fig. 6. A New Jersey packing house. Elevation plan.

The most important point in arranging facilities for washing is convenience. Much valuable time may be saved or lost as arrangements are good or bad. Floors should be well drained and are preferably made of concrete. On many farms the place where this work is done becomes a veritable "Slough of Despond."

PACKAGES.

The package is one of the most important factors in determining the price received for fruit or vegetables. In choosing containers for the various crops there are several points to be considered. In the first place, the package that is already standard on the market in question is to be preferred, provided it is desirable in the respects mentioned below.

The second consideration is appearance. A neat, clean, attractive package helps sell the goods. It bears the same relation to high grade produce that a suitable frame bears to a beautiful picture. Some packages are clumsy at best and if used a second time, actually drag down the price of good stuff. The employment of second hand packages is in general to be discouraged. If really neat and fresh looking, the saving in cost may justify their use. Ordinarily they are dirty, much-be-stencilled, and even misshapen. It is better to use a cheap package and let it go with the goods. Wooden packages sometimes vary considerably in color. Uniformity is always desirable, particularly in the smaller sizes.

In the third place, the package should hold full measure. Shy measure is dishonest and never pays. A customer who finds a little more than he expected is a far better advertisement than one who finds a little less.

The smaller packages are, in general, more desirable than the larger ones. Bushels and barrels are always re-measured and the grocer expects a profit for the handling. This profit should be the grower's. A second measuring always involves more or less loss.

Care must be exercised to secure a container that is sufficiently strong and firm to insure safe arrival of the produce at market.

Ease of packing is an important desideratum. Labor is expensive, and when prices are low, a fraction of a cent may mean the difference between profit and loss.

The package should be selected with reference to economical storage of empties and compact loading of wagons and cars. Stacking should not injure the contents.

A convenient handle on a basket is tempting. It seems to say, "Take me home along." When such vegetables as tomatoes, peas, or cantaloupes become cheap, a chip basket holding a peck, neatly packed and branded, serves to stimulate sales. Numbers 1 and 2 and the smaller sizes of Number 9, all in Figure 8, are excellent for this purpose. One who usually asks for a quarter peck or so measured int- - --per sack is easily persuaded to take a whole basket.

Having decided upon the packages to be used, estimate the probable number required for the season and buy early. It is well in choosing to select those that come nested or knocked down. Storage room is often at a premium. It is better to put up a simple shed than to expose packages to the weather, even for a few weeks. This is just as important with those that are used more than once as with the new ones. Weather stains are anything but attractive to the buyer. Knock-down crates may be nailed together on rainy days or when work is slack, although lack of storage space may interfere with this to some extent.

If possible, buy in carload lots direct from the manufacturer. Better prices are thus secured and the packages are on hand when wanted. If a full car is not needed, two or three neighbors may combine their orders.

Trimmings and wrappings of various sorts are coming into more and more general use in the packing of horticultural products. The citrus fruit growers have for years wrapped the individual specimens in tissue, often printed with a neat legend. Of more recent years, the producers of apples, pears, eggplants, tomatoes and a number of other crops have adopted the same practice. Fruit boxes are almost universally lined with paper, and lace circles and borders are much used in topping packages of all sorts. Anything that indicates that the packer has gone to extra trouble in putting up the goods impresses the prospective purchaser with the idea that he is looking at an article of exceptional merit. These methods are of especial value so long as they are unique. They will always be profitable but the first men to adopt such practices will reap the greater returns, while establishing a permanent reputation for the best that is to be had in their respective lines. Be it remembered, however, that frills and furbelows are useful only with the best of produce. No amount of paper lace will make second rate goods sell for first quality.

Different crops have widely different requirements in packages. Of recent years there have been notable innovations among the containers used for many of our crops. There also remain in use a great many that are ripe for the discard.

Apples and Pears. For these the double-headed barrel has long been standard, but the bushel box is rapidly gaining ground as a container for strictly high grade fruit. A box of apples often sells for nearly or fully as much as a barrel from the same trees. The Canadian Department of Agriculture states that "The following facts are well established:

1. The highest priced apples are shipped in boxes.
2. The box is the only practical package in which an apple can be transported with any reasonable degree of economy in a fit condition for the highest dessert trade.

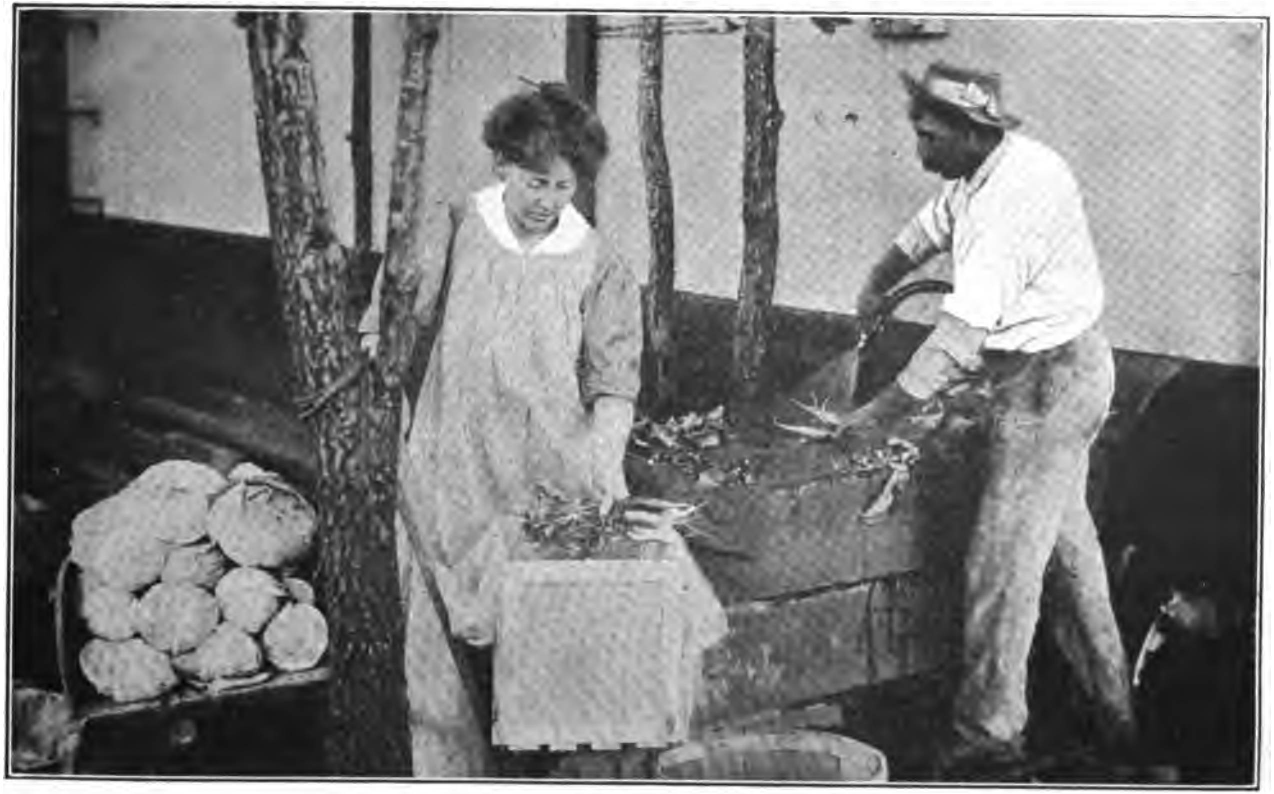


Fig. 7. Careful washing pays. (Courtesy L. I. R. R. Experimental Farms.)

3. Only the best grade of apples will pay in boxes.

4. The retail merchants, other things being equal, prefer the boxes for at least a large part of their trade. The auction markets and fruit brokers of Great Britain do not take kindly to boxes."

For fruit at moderate prices, the barrel will likely hold its place. However, the low price market is almost invariably over-supplied, while the highest grade is always in demand.

The standard apple box of Canada is ten by eleven by twenty inches, inside dimensions. The Oregon box is ten and a half by eleven and a half by eighteen inches, inside measure. The top and bottom are of quarter inch stock, the sides of three-eighth and the ends of three-quarter inch boards. The material should be odorless, dressed, and free of splinters. The cost is about thirteen cents per box in the flat.

Peaches are shipped most extensively in conical baskets of three-eighth to five-eighth bushel capacity. Figure 9 shows a type much used about Philadelphia. Round bottom bushel baskets are also used, though these are too large for the best results. For the early crop and for fine fruit, the carrier containing six four-quart baskets (Fig. 8, Nos. 7 and 8), is very desirable and widely used. The four basket chip and the Climax basket (Fig. 8, No. 1), are quite satisfactory.

Cherries and Plums are commonly marketed in crates containing quart berry baskets (Fig. 8, Nos. 5 and 6), in carriers containing eight two-quart baskets (Fig. 8, No. 4), in four basket chips, and in fancy packs in small boxes. The latter weigh from eight to ten pounds and sell at two to five dollars per box. Comparatively few producers continue the use of buckets and the larger baskets.

Asparagus is bunched as indicated in Figures 10, 11 and 12, and is marketed in crates of many forms. Probably the best is one which is a little wider at the top than at the bottom to accommodate the tapering bunches. It holds twenty-four standard three-pound bunches, standing upright on the bottom.

Beans and Peas are often shipped to New York in burlap sacks, a very poor plan. The peach basket or the third-barrel hamper (Fig. 8, No. 3), are far better.

Cabbage. The Southern crop is marketed in crates of three sizes, differing according to locality, and in slat barrels. The late crop is handled mainly in bulk, though it is barreled to some extent.

Cauliflower is barreled by most Long Island growers, although some are wrapping the heads and packing in crates.

Celery is marketed in several types of crates. Kalamazoo producers favor a flat crate holding perhaps twenty-four good stalks. In some sections a frame twenty-four inches square and twenty-inches deep, lined with pasteboard or heavy paper is packed with stalks standing on end. They may be tied into dozens before being placed in the crate, using raffia or red tape.

Cucumbers, Eggplants, and a number of other vegetables are shipped in hampers holding one-third to one-half barrel. The slat lid is fastened with wire clamps.

Lettuce, Spinach, Radishes, and the various salad crops are marketed in barrels and in baskets of many sorts. The half bushel chip basket (Fig. 8, No. 9), is used to some extent, especially for greenhouse produce. Western New York growers of head lettuce are coming to use square boxes which hold two or three tiers of a dozen heads each.

Muskmelons are sold in bulk, in crates holding about a bushel, and in hampers.

Tomatoes. A great variety of packages is used for the disposal of this crop. The southern growers use one of the best, the six basket carrier, already described. The four basket chip shares this popularity. These two devices, well packed and neatly branded would enable Northern growers to secure better prices, especially early in the season. Philadelphia growers, as well as those about many other cities, pack in peach baskets of various sizes. Though these are sometimes shipped, they are not well adapted to the purpose. Elaborate framing is required in the car and at best bruising is common. New Jersey growers use the crate shown in Figures 13 and 14, holding about twenty quarts. The two outside top slats are not removed for packing. The cleated lid permits the crowning of the top layer, while the rails on the bottom protect the upper fruits when the crates are stacked. This package possesses the advantage of compact stacking, but it is unhandy to pack, gives only fair protection for a tender fruit, over-weights the bottom layer, and does not make an attractive display of the goods. Indeed, retailers invariably repack in smaller baskets. Growers frequently use these packages year after year, making repairs as needed, though new ones cost but about twelve cents. It is needless to say that first class fruit is not given a fair show when shipped in such a crate after it has made a few trips. The drop handle chip basket (Fig. 8, No. 9), is very satisfactory as a gift package for a short wagon haul. They may be secured compactly nested at about forty cents per dozen. They are easily packed and show the fruit to advantage, but they must be carefully handled. A moveable rack such as is shown in Figure 29 is used to support the tiers of baskets on the market wagon. The basket of Figure 15 is used for hothouse tomatoes. It is so proportioned as to stack, when covered, in criss-cross fashion with little loss of space.

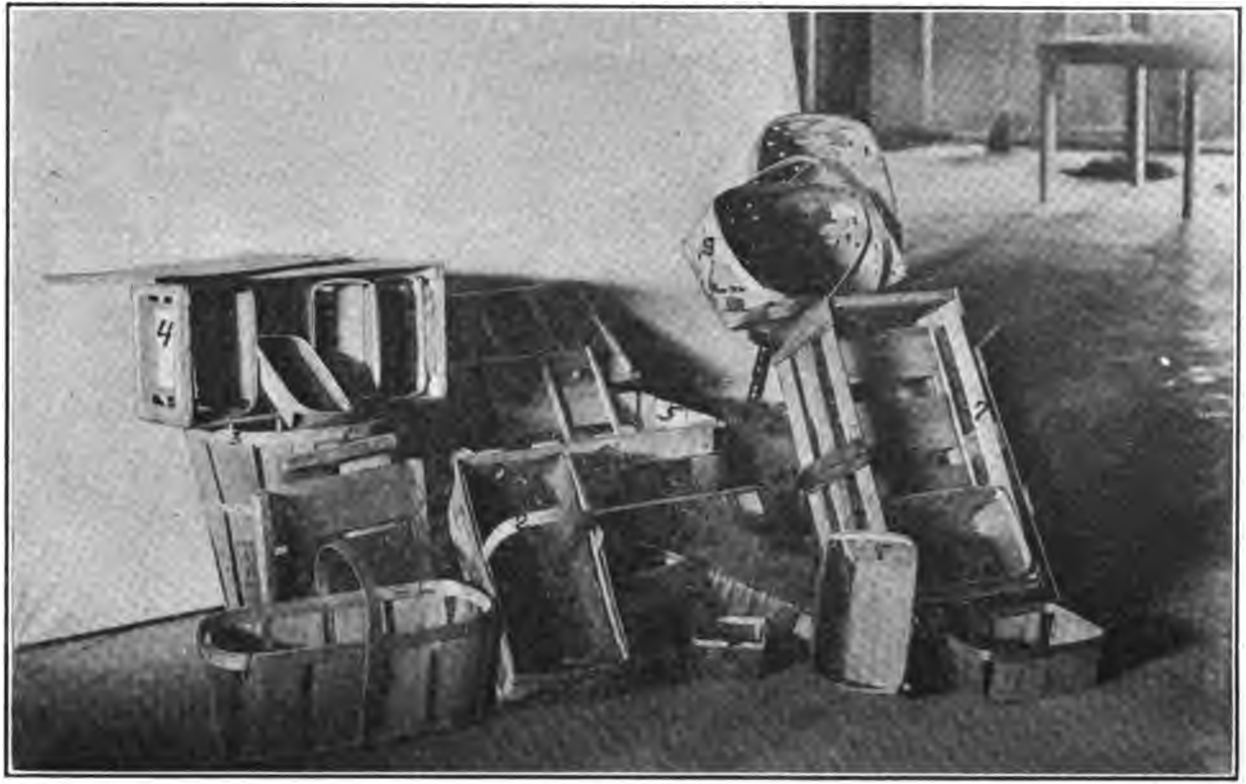


Fig. 8. Some popular packages.

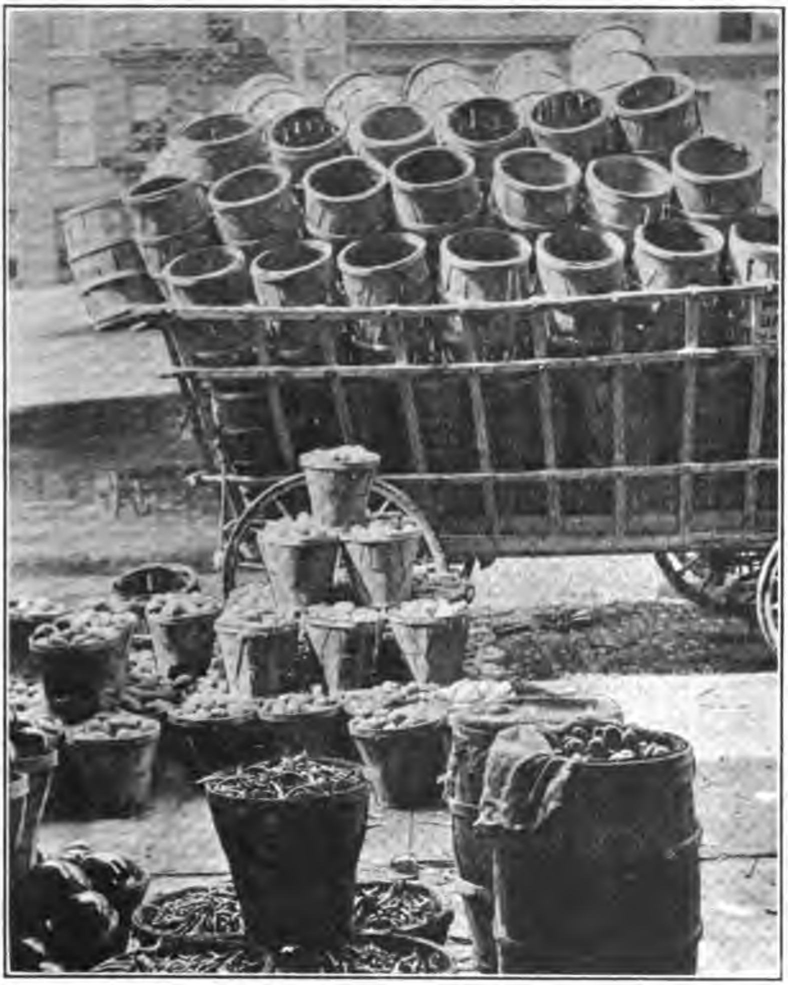


Fig. 9. This basket is much used about Philadelphia. Note the braces. (Courtesy Prof. J. P. Stewart.)

GRADING AND PACKING.

Differences in grading and packing are of sufficient importance to spell the difference between success and failure. Money judiciously expended in this work is returned many fold in profit. Professor Judson, in Idaho Bulletin 54, shows that the profit on a hundred boxes of apples may be nearly doubled by culling to eighty boxes. This is a principle that can hardly be over-emphasized.

As the marketing season opens, it is necessary to determine what grades are to be made and to definitely establish the standards for those grades. Uniformity is the first consideration. Make as many grades as are necessary to attain this end. This principle applies first to quality. A very few soft tomatoes or gnarled apples are sufficient to discount a whole package and a single poor package is sufficient to discount a whole shipment. Its value is determined by the poorest rather than the best. Further, the contents of a package must be uniform in size, shape, color, and ripeness. An even appearance attracts the buyer. Local market conditions must be carefully studied in establishing grades. A system that is the best for one city may be a failure for another. For instance, a foreign population is less discriminating than Americans. On the other hand, there are few markets that will not consume a certain amount of the best, and that amount will surely increase as the public learns the real meaning of quality. The grading may be varied somewhat to suit the season. Fruit for home canning need not be graded so closely as for hotel trade. Yet this idea is often carried too far. The grower feels that as the price drops he cannot afford to be so careful as early in the season. But when the market has slumped it becomes a question as to whether goods is sold at all or not and the high grade goods sell first. There is no time when an attractive appearance counts for more. Furthermore, it is often the case that well packed produce brings an advance over the ordinary sufficient to pay the whole cost of picking and packing. The writer has seen this on the most badly glutted markets. For these reasons, grade high. It pays in nearly every instance.

Having established in his own mind the grades that are to be made, the grower must exercise special care to maintain these standards. He is himself in danger of drifting away from them. The line between firsts and seconds cannot be defined in so many words. The helpers must be carefully and persistently instructed in this matter, both by word and by example, and their work should be frequently examined and criticised. Carelessness on the part of employees spoils many a pack that is meant to be of the best.

The work of packing is usually carried on in connection with the work of grading. Security is essential. The slightest shifting in crate or barrel is likely to result in bruising and subsequent decay. Packages should be filled "just right," making the upper layer high enough that the lid will securely bind the contents, but not so high that fruit will be cut or bruised.

Good measure and honest packing go hand in hand, as two of the best and most lasting advertisements a man can use, provided, of course, his brand appears on every package. The writer knew a grower who laid by the finest tomatoes to be placed along the cracks and on top of the crate shown in Figure 13, filling the remainder of the space with stock which was decidedly inferior. He justified the practice by the statement that it is universal, and that if he graded uniformly, his pack would be discounted on the market by the usual standards, judging from the top layer. This grower, even with such a market, might establish an enviable reputation among the better class of purchasers by labeling his crates with an attractive brand, together with some such phrase as "You see the top—you see all," and then conforming strictly to it. Buyers soon learn to pick out the marks that they find reliable, and are willing to pay more for such goods.

In the packing of almost every horticultural product, modern methods call for the individual handling of each specimen. Dumping of baskets is to be practiced only with the lower grades of such fruits and vegetables as are not easily bruised. This tendency gives opportunity for the proper placing of each specimen, a practice that pays. Firm packing is secured and the layers are faced in such a way that the appearance is attractive to the very bottom.

The example that has been set by Southern and Western growers in labelling is destined to be more and more generally followed. The co-operative associations are doing much for this movement. A South Jersey association has made "Red Star" sweet potatoes famous throughout the country. Among individuals, Mr. Horace Roberts, of Moorestown, New Jersey, is a leader. He markets locally in the reinforced peach basket shown in Figure 9, and his name is neatly lettered on every rim. Hampers of cantaloupes are marked with a neat sticker. Mr. Roberts knows how to pick a ripe watermelon. Each one marketed bears a label guaranteeing the quality and the guarantee means what it says. This suggests an idea that cannot be over-emphasized. Fancy packing and labelling are worse than useless unless the produce is fancy.

Perhaps it is not amiss to again emphasize the importance of organization and method in the work of grading and packing. In the first place, it is the sort of work that offers splendid opportunity for loafing and dawdling. Further, a packer may seem to be busy, using

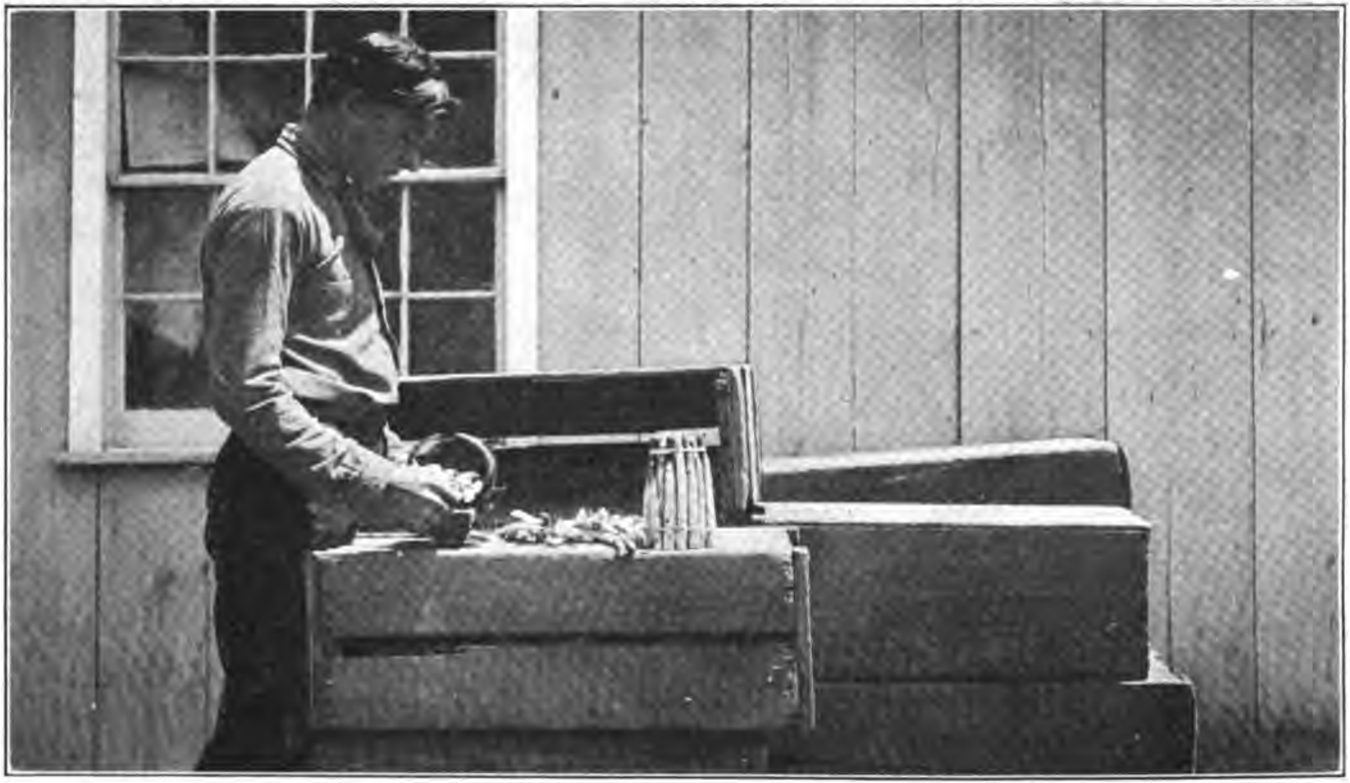


Fig. 10. Bunching asparagus. Filling the buncher. (Courtesy L. I. R. R. Experimental Farms.)

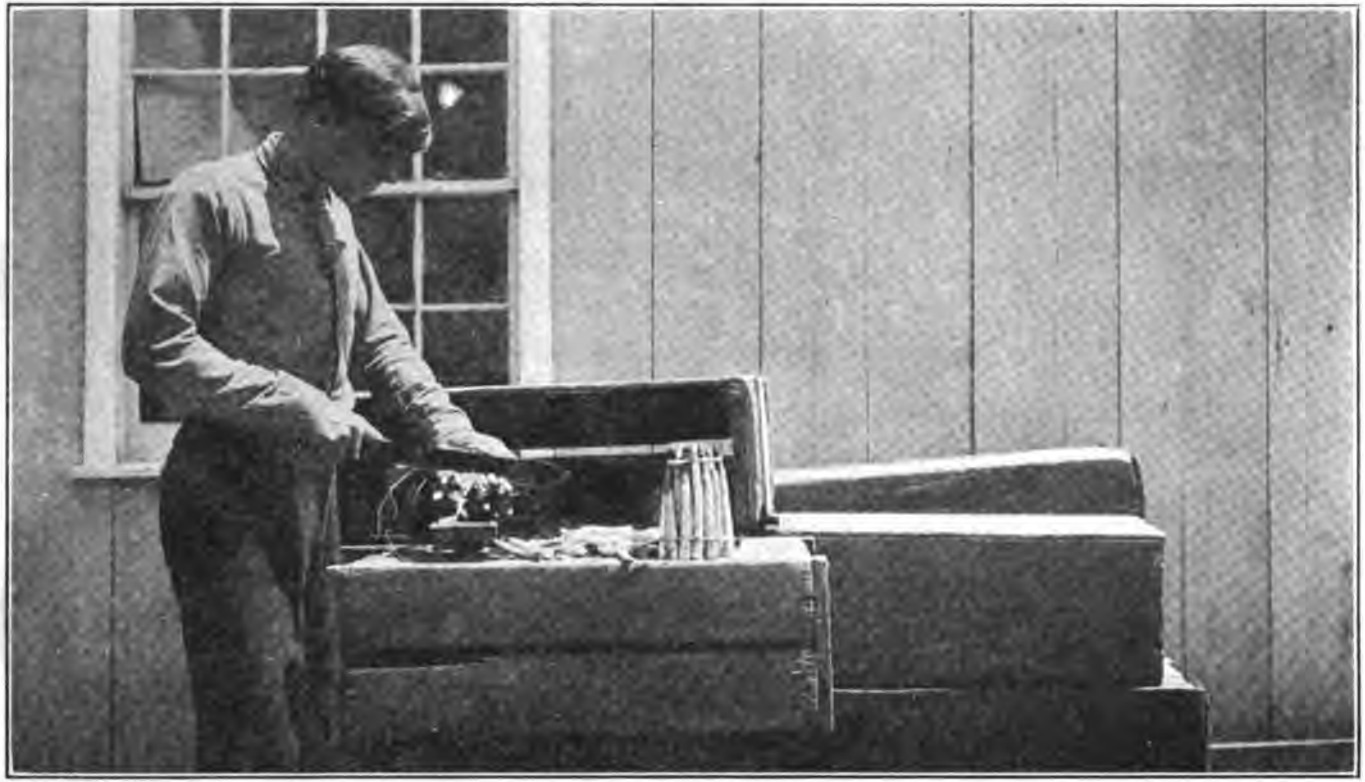


Fig. 11. Bunching asparagus. Trimming. (Courtesy of L. I. R. R. Experimental Farms.)

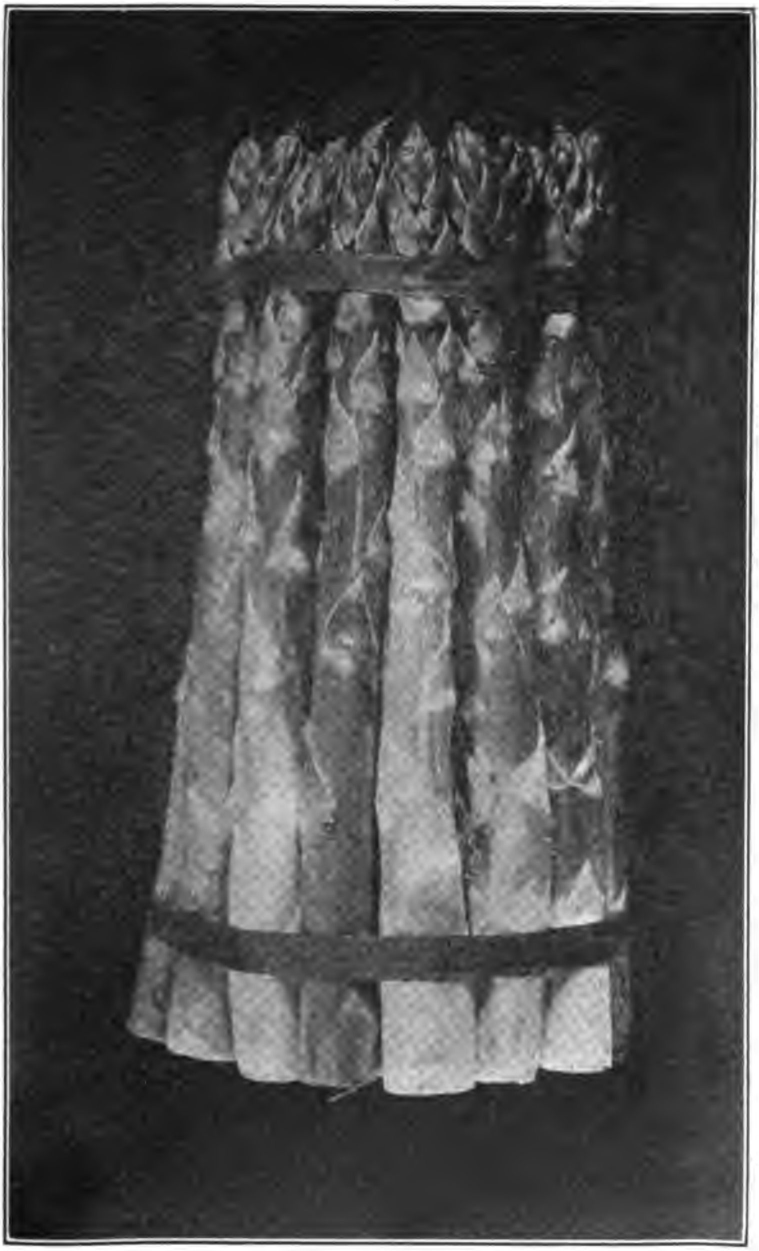


Fig. 12. Perfect. (Courtesy C. E. Myers.)

every energy, while in fact he is accomplishing little because he practices an awkward method. The fewer the motions required to do the work the better. The benches should be of the proper height and the workers should usually be seated. The baskets from which fruit is taken and the packages intended for the various grades should be conveniently arranged. Thus in packing tomatoes in baskets in two grades the arrangement indicated in Figure 16, is found to be the handiest. A candy bucket on the floor serves for the removal of broken and rotten fruits. The prime basket is slanted toward the worker. The tomato is picked up with the left hand, dextrously wiped with a cloth held in the right, while the stem is removed with the little finger of the left, and is placed in the proper receptacle, fitting snugly, with stem end concealed. It can readily be seen that any other arrangement would necessitate awkward movements, as the crossing of hands or changing the fruit from one hand to the other. These details seem simple, but they are often neglected though they are of the greatest importance in securing efficient and economical work.

No considerable number of packers should be allowed to work without competent supervision. Even with an efficient foreman the retail salesman all too frequently finds an imperfect package. The piece-work system is very satisfactory. Let each worker place in his packages a small slip bearing his number. Responsibility is then fixed. In one instance boys were hired at from fifty to seventy-five cents per day for picking and packing tomatoes. Results were anything but satisfactory, the work being poorly done at high cost. The piece-work plan brought about a radical change, securing better packing at lower cost, and at the same time higher wages for the boys.

The barreling of fruit involves certain important details that are not covered by the principles outlined. The fruit is brought to the packers and emptied upon a grading table, such as is shown in Figure 17. This one should have a burlap or canvas lining to prevent bruising. Primes or culls, according to convenience, are removed from the table and the remaining fruit is allowed to run into the barrel. The bag is so manipulated as to prevent damage by dropping. The first process in packing is facing the barrel, which has been set with the top down and the bottom removed. After label and cushion pad are laid, a layer of apples is placed, with stems down to snugly cover the space. The next layer is also faced so that the color shows through the interstices of the first layer. The barrel is then filled, shaking gently as the work proceeds. The last few layers must be so laid that the lid will bear evenly upon all, being about level with the top of the staves, or a trifle higher. The bottom cushion, if it is used at all, is now placed and the head is forced to place with a press. Nailing and hooping complete the process.

The marketing of fruit in boxes has become a matter of such great importance to both producer and consumer that a brief consideration of some of the principles involved and the methods employed is well worth while. Only absolutely sound fruit is to be considered for boxing. Grading is very minute as to size and color. A finished box must show well nigh perfect uniformity. The different sizes of fruit necessitate a large number of styles of packing. These packs are grouped under two general classes, the "straight" and the "diagonal," as diagrammed in Figure 20. The latter is preferred as the pressure on a given specimen is more evenly distributed and there is less danger of bruising. Many packers have abandoned the straight pack and use boxes of two forms to accommodate all sizes. The dimensions of these are 10½ x 11½ x 18 inches and 10 x 11 x 22 inches, inside.

Boxes are always lined with paper and cards are sometimes placed between tiers. The box is so packed that, when nailed fast, the top and bottom will each bulge three-quarters of an inch. The lid is clamped to the box in a specially devised press while it is being nailed.

Many of the objections to box packing are due to the fact that the work is not properly done. Thus the box of Figure 25 contains excellent fruit, but it would be almost unmarketable, as it is not full, and the bottom is too thick to permit a bulge.

The work of packing is certainly awkward to the unskilled hand but practice brings the skill in sight and judgment and action that is necessary before ideal results can be obtained.

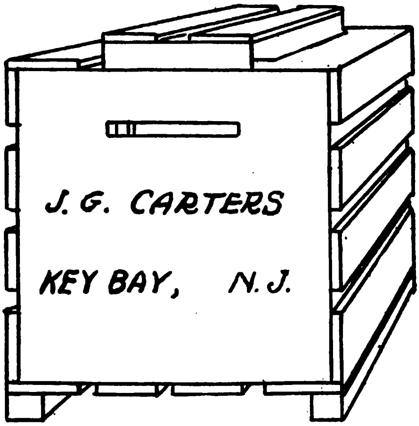


Fig. 13. The New Jersey tomato crate.

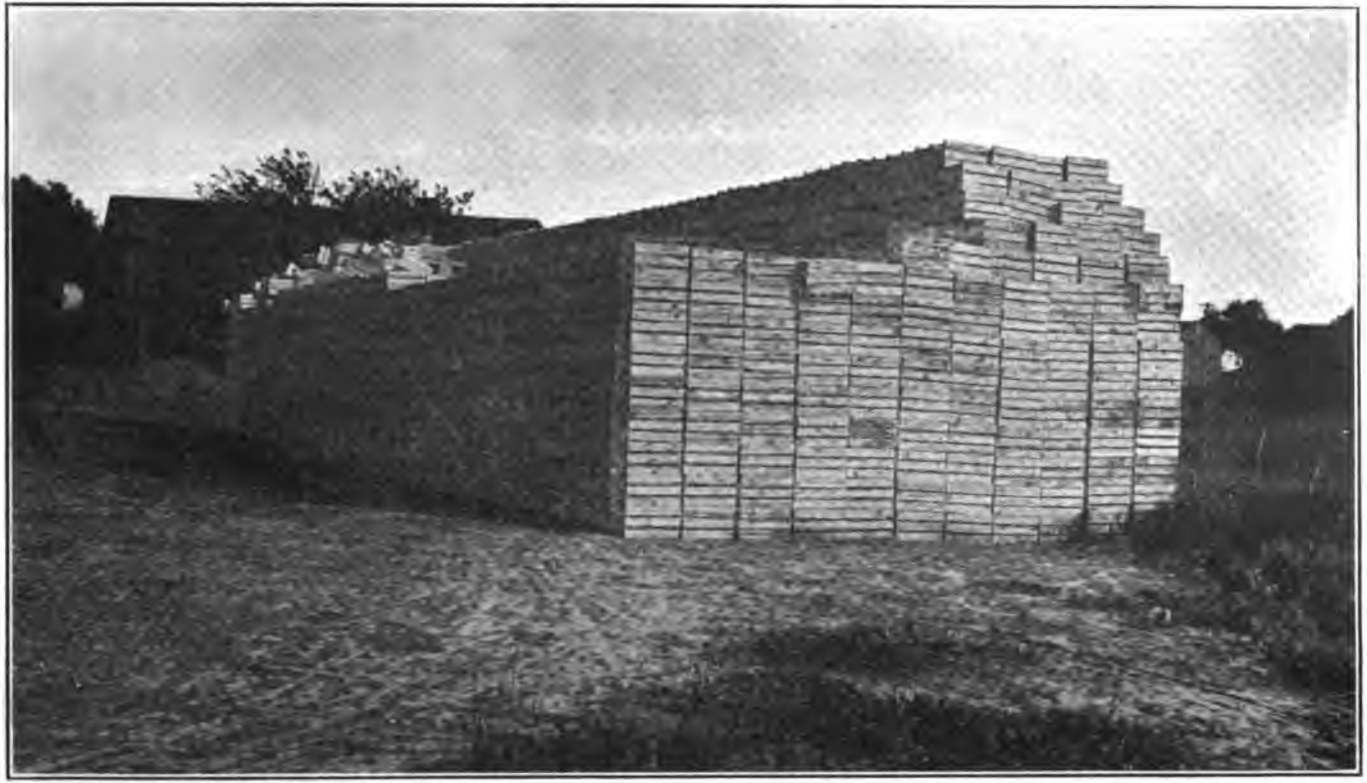


Fig. 14. Waiting for the crop. (Courtesy Prof. R. L. Watts.)

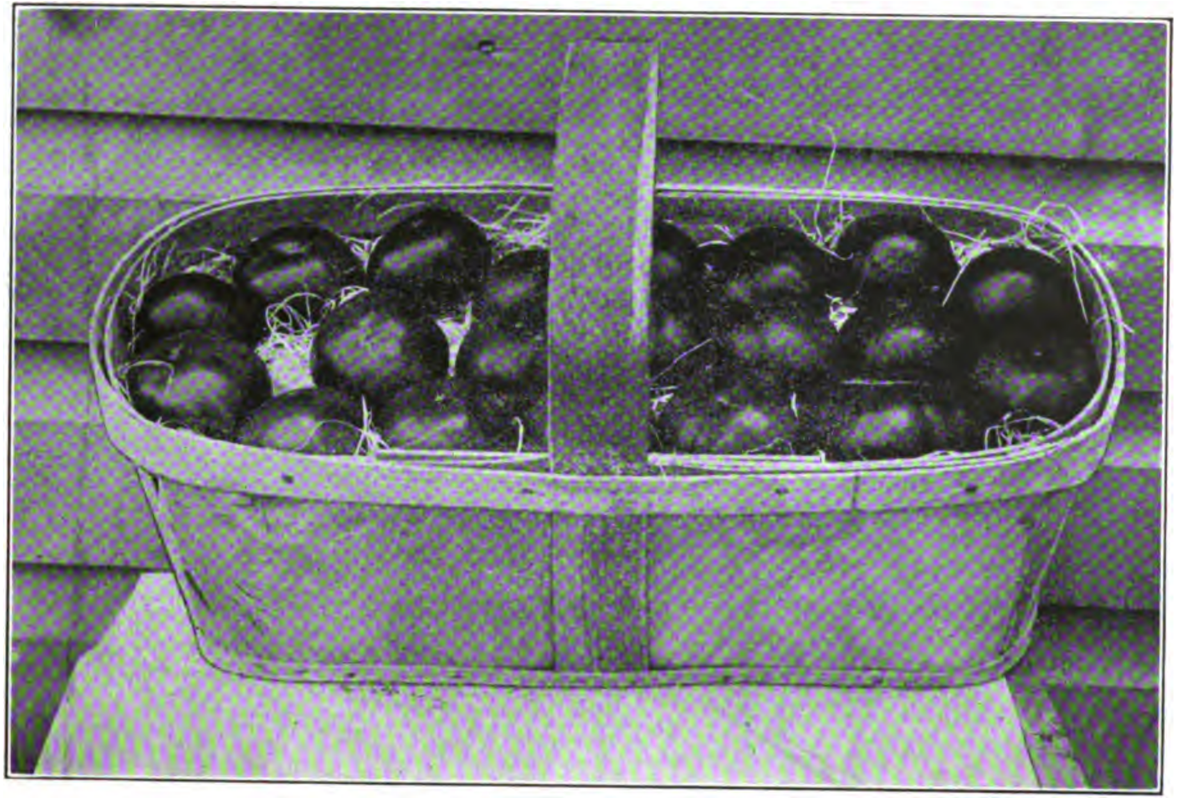


Fig. 15. Hothouse tomatoes.

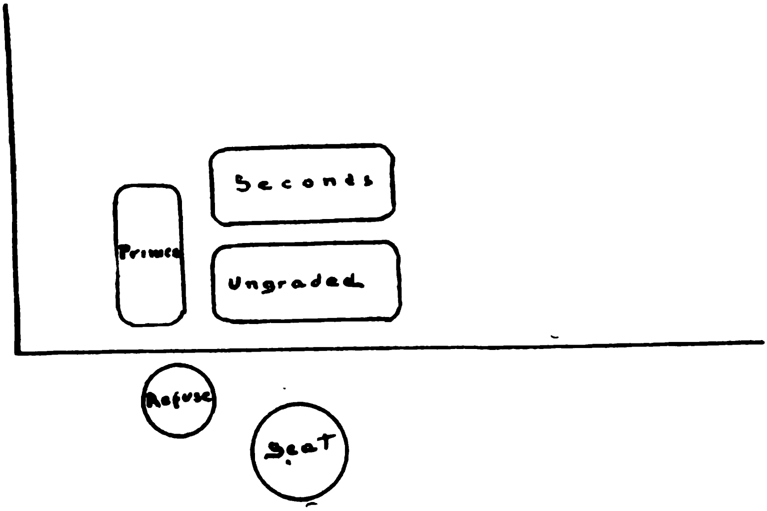


Fig. 16. Arrangement of baskets for grading and packing tomatoes.

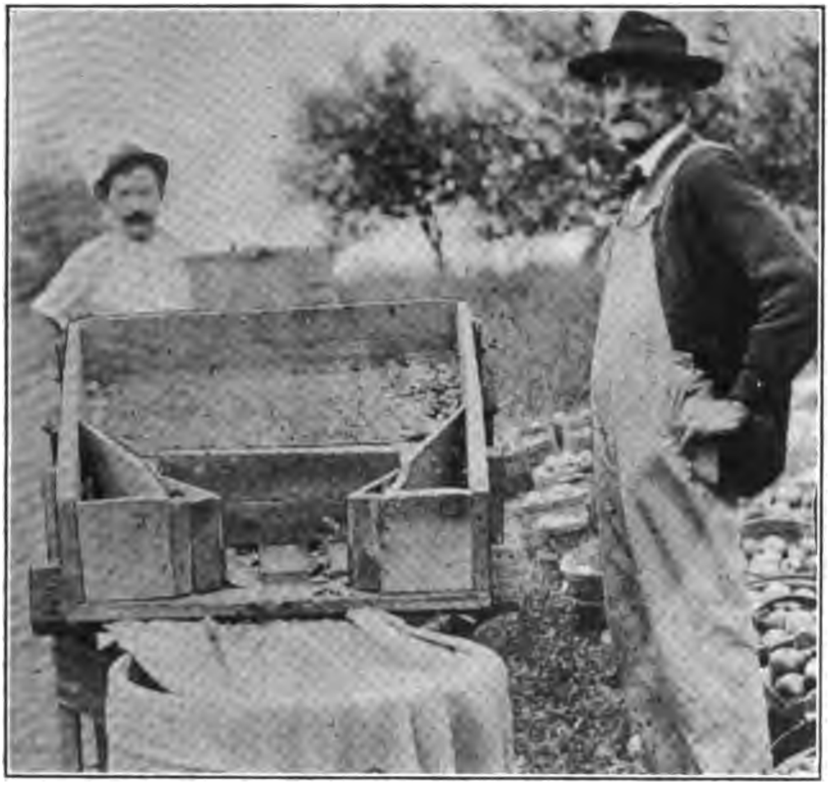


Fig. 17. Grading table. A lining of old carpet or the like would prevent bruising.

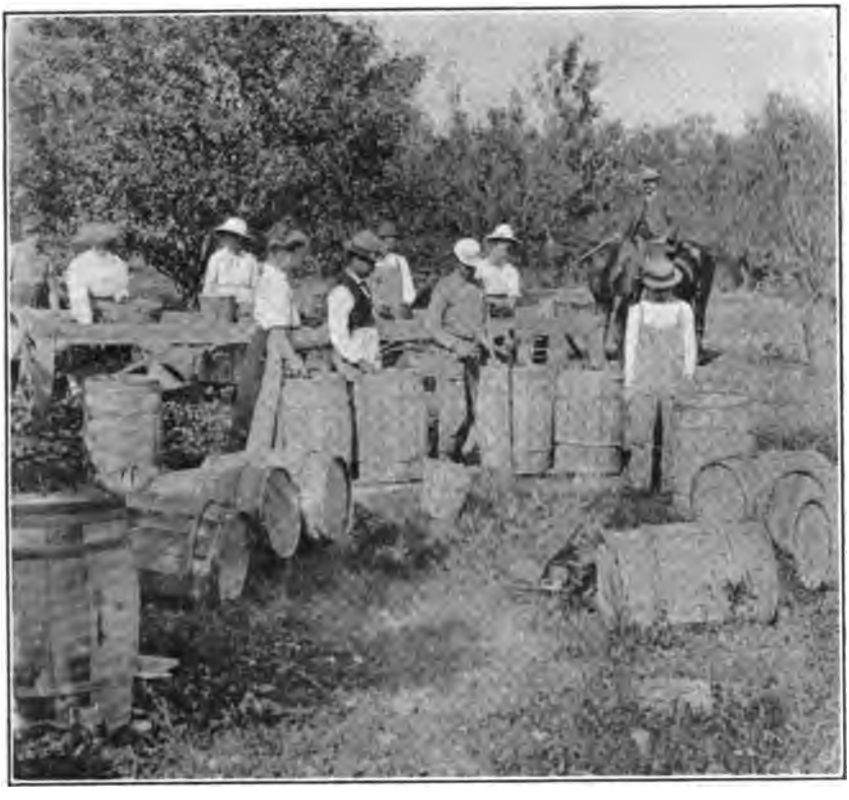


Fig. 18 In a Pennsylvania orchard.
(Courtesy of Prof. J. P. Stewart.)

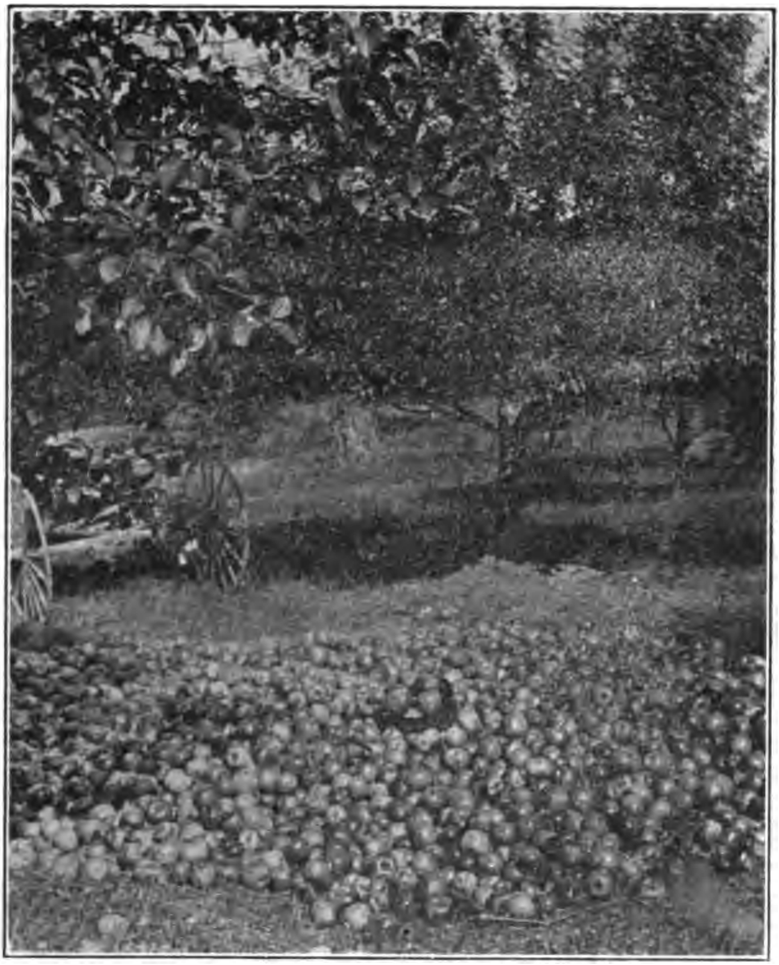
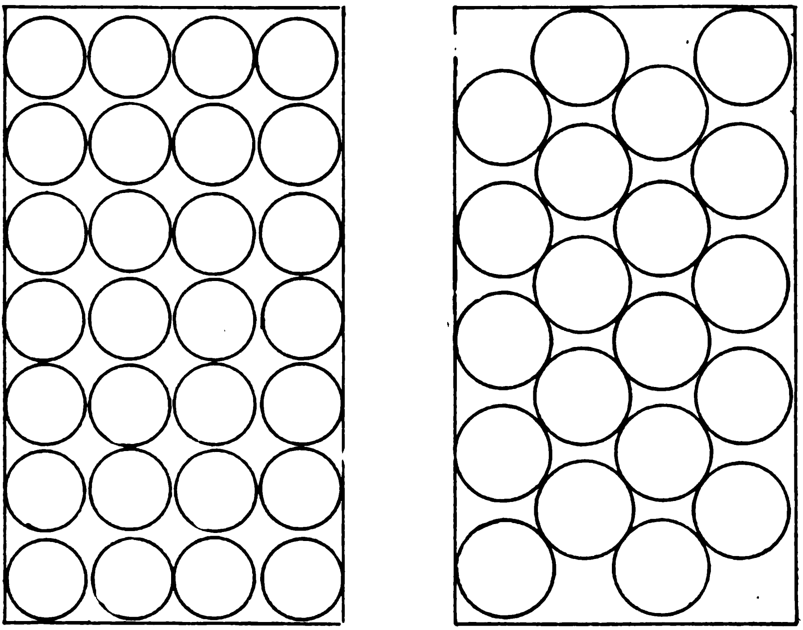


Fig. 19. This method of caring for fruit is no longer approved. It results in bruises and is costly of labor.
(Courtesy of Prof. J. P. Stewart.)



Straight

Diagonal

Fig. 20. Diagrams of box packs.

CHAPTER III.

TRANSPORTATION.

ADVANTAGES OF A SHORT HAUL.

The cost of transporting produce from farm to market is a great barrier between the producer and the profit that should be his. It presents a question that must not be neglected in choosing a farm. Other things being equal, it will pay to locate as near the consumer as possible. Yet, other considerations, as cheapness of land, or particularly favorable cultural conditions, may draw the prospective grower from his market. If the railroad or the steamboat are to be used, it is just as important to make the haul to car or dock as short as possible. While the consumer may in one sense truly be said to pay the freight on what he eats, yet freight, cartage, and commission are deducted from the producer's returns, and a long haul by rail or water is decidedly unprofitable.

TRANSPORTATION BY WAGON.

It may be said in general that wagon transportation is costly. This is very evident if calculations are made on a ton-mile basis. The distance that may be covered both ways in a day is about the limit of profitable hauling with most produce. Yet Long Island growers make considerably longer trips. The skilled marketman drives out from New York with the empty wagon and meets a driver from his employer's farm with the next day's load. The limit of profitable hauling depends somewhat upon other transportation facilities. Thus, in one case in Western Pennsylvania, it was found more profitable to haul eight miles and ship on the main line than to haul but one mile and ship on a branch.

The choice of equipment for marketing depends upon a number of factors. First, the nature of the roads. If the region is hilly and the roads are rough smaller wagons must be used than if the country is level and the roads are of the best. The wagons shown in Figure 26 and 27, are in use in the outskirts of Philadelphia, and are built to carry three or four tons. Mr. Charles Voss, Elmhurst, Long Island, has a market wagon upon which he can load a hundred and ten barrels. Second, retail trade is best served by a comparatively small wagon, conveniently arranged to afford ready access to the various fruits and vegetables. For this class of trade, medium weight horses are best, as they make better time from house to house than the heavier ones. Quick starting and stopping, as well as good training in other points, are much to be desired. If sales are made to retail dealers, the same considerations hold to a lesser degree, while hauling for shipment or to wholesalers, or to a public market are best accommodated with heavy wagons and draft teams, as illustrated.

In the third place, the kind of produce to be marketed and the kind of package to be used must be considered in planning the wagon. Very different beds are required for the convenient hauling of crates and peach baskets. There will usually be opportunity for the display of considerable ingenuity in designing an outfit in which all the packages to be used can be economically loaded. Figure 28 shows the movable rack used about Wilkes-Barre for the accommodation of uncovered peach baskets. The growers of Burlington county, New Jersey, use a wagon with slanting sides in which the tiers of fourteen-quart reinforced peach baskets just fit. The upper layer is set with spaces between the rows and baskets are slipped into the spaces, thus bringing the load to a ridge.

There are several general considerations that are not to be forgotten in securing equipment. First, cheap wagons, horses, and harness represent poor economy. Breakdowns cost in time, produce, and repairs. The writer knows of a wagon weighing eighteen hundred pounds, of two ton capacity, and purchased at a cost of $175 which withstood seven years hard marketing over unusually rough, hilly roads. At the end of that time it was overhauled and was then good for at least as many more years. The annual repair bill was almost nil, excluding of course paint and tires. High grade horses are reliable, powerful and durable. They eat no more than poor ones and are a source of great satisfaction to both owner and driver. Neatly harnessed to a clean, well-painted wagon, such a team makes a splendid advertisement.

Second, an unhandy wagon means increased expense. Every detail should be planned for convenience. The wagon should be easily mounted and dismounted, hitched and unhitched. The brake lever should be easily reached and easily worked. The load should be accessible. The front wheels should by all means cut under, and yet the bed should be as low as possible.

Third, every possible provision should be made for the comfort of the driver. The market wagon must make its trips rain or shine and the top should afford as good protection as a buggy. Employees appreciate an interest in their welfare and make ample repayment in loyal service.

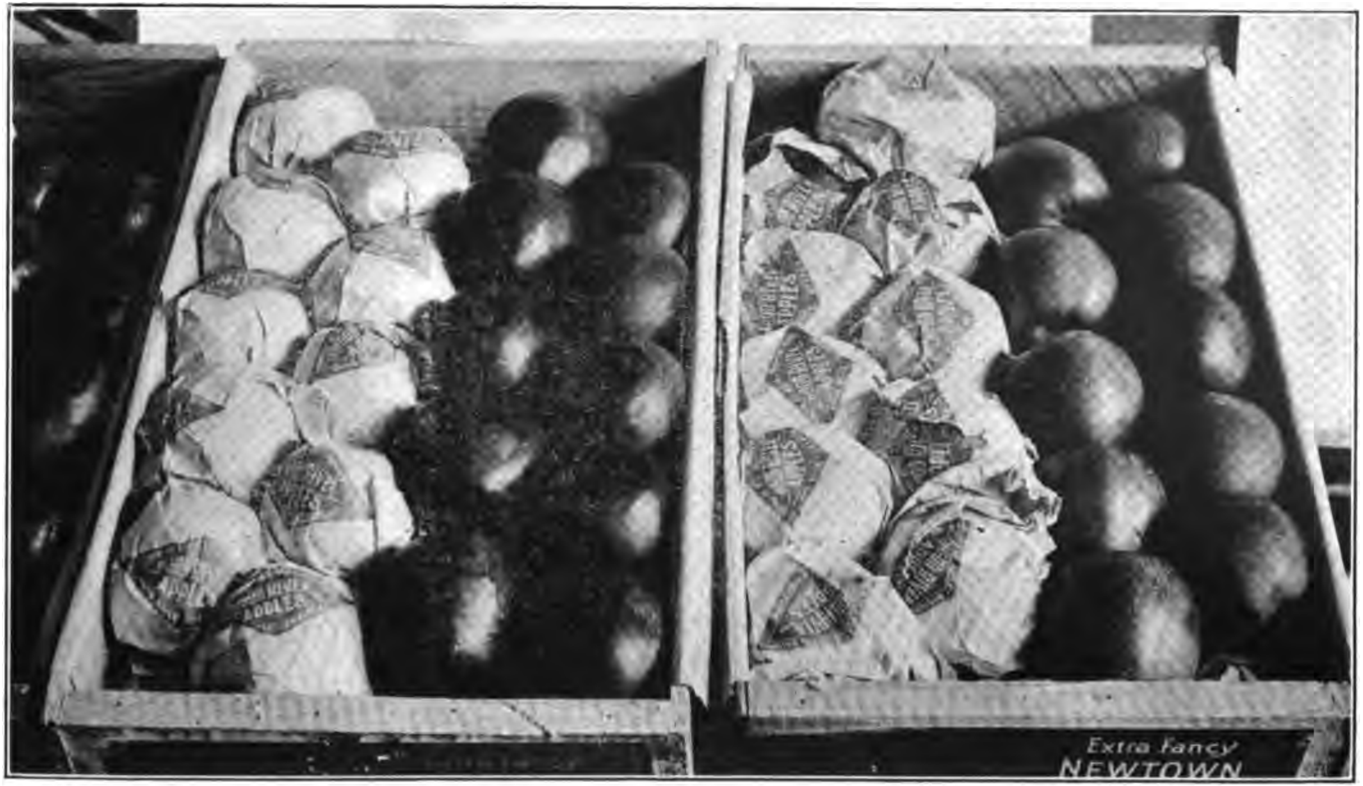


Fig. 21. A farmers' Western pack.

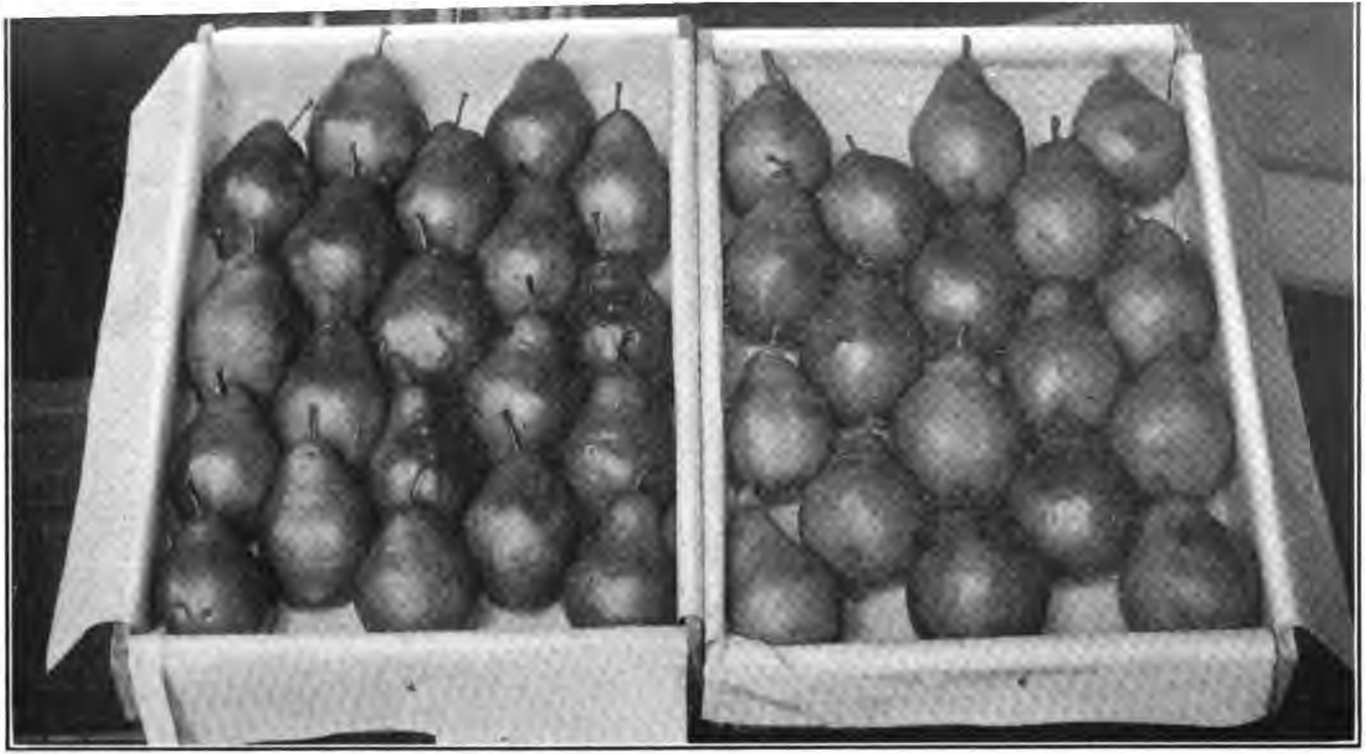


Fig. 22. Pears packed beautifully are from Idaho.

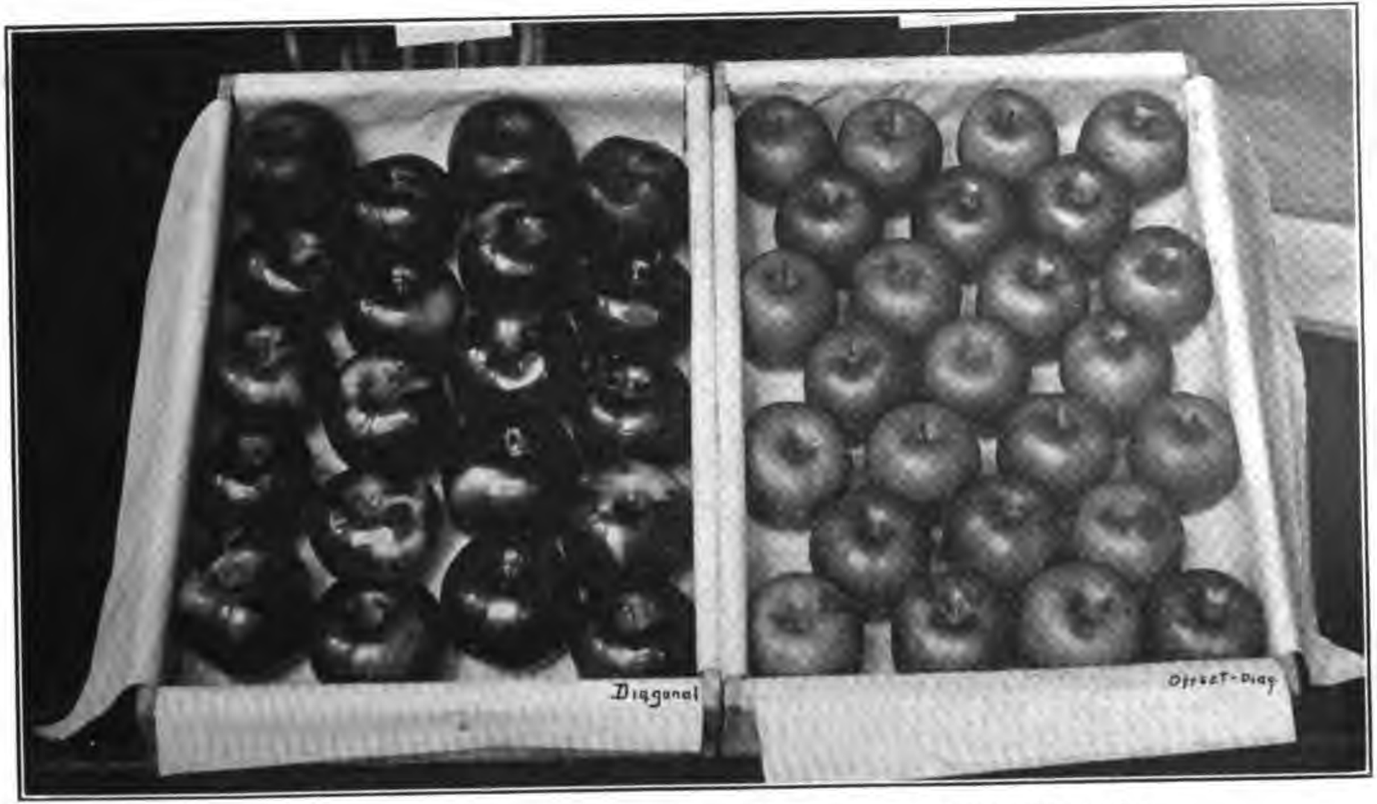


Fig. 23. Apples from Council, Idaho. Too much empty space in the offset packs.

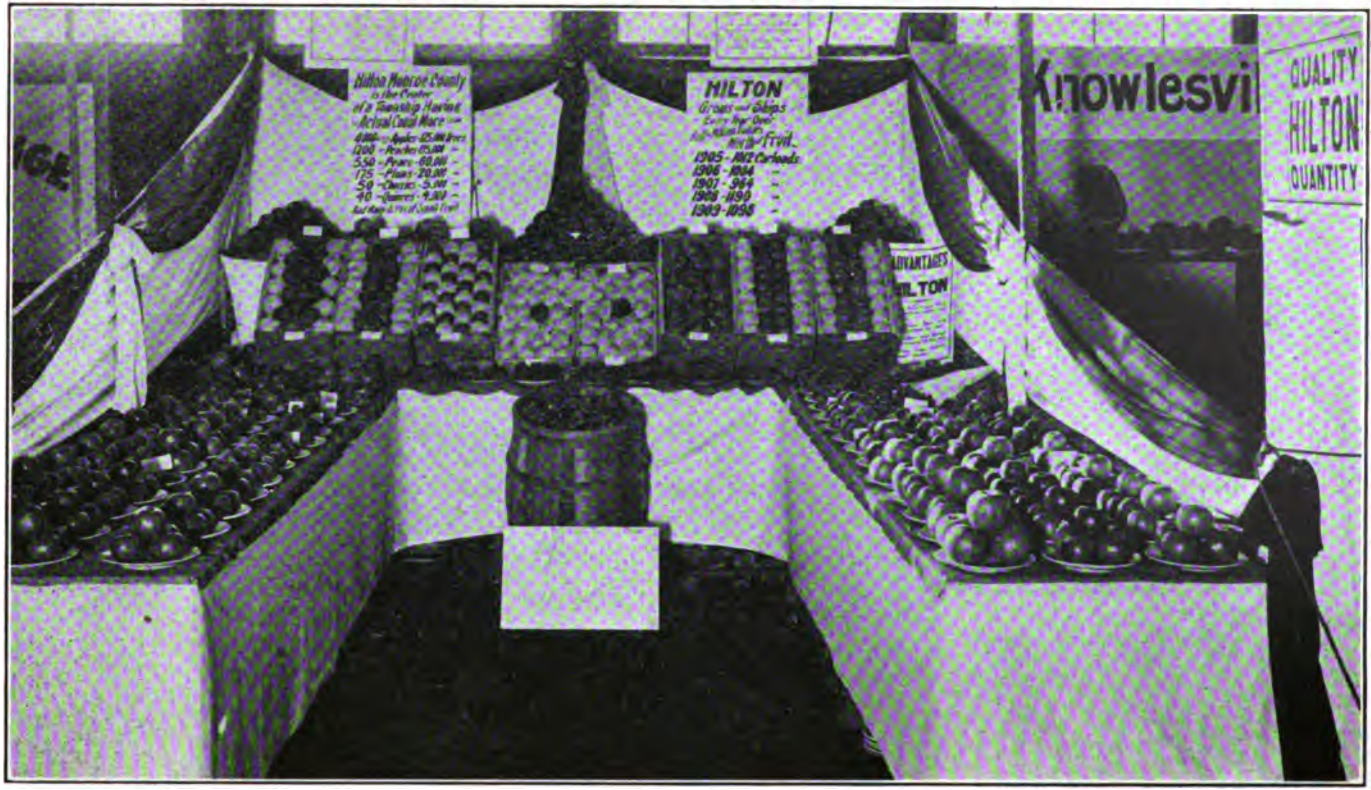


Fig. 24. New York grows box apples. Two straight packs on the right.

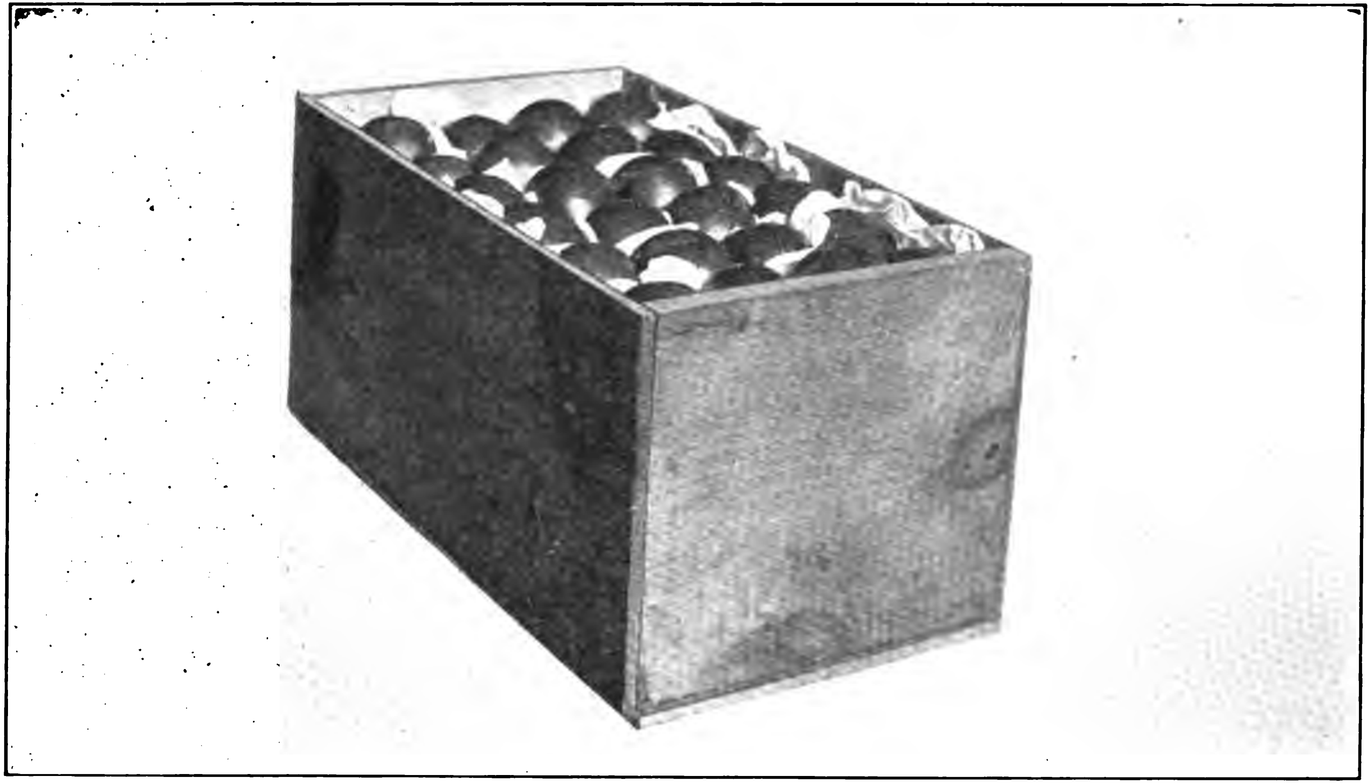


Fig. 25. Good apples badly packed. The box is not crowned and is built as to permit a bulge.

Fourth, plan a wagon and plan it right. Then make all the others like it. Interchangeable parts, especially wheels, save many a delay. If beds are of standard dimensions, no time is lost in figuring out a loading plan for every trip—a detail that counts.

MAINTENANCE.

As indicated above, an attractive appearance is a valuable asset. Many gardeners who care for the niceties of the business devote Saturday afternoon to washing wagons, cleaning harness and putting everything in trim. The horses deserve the best of care. Nothing contributes so much to a sleek appearance, as well as to good condition, as faithful grooming. Haste to reach market often leads to neglect in this matter—a neglect that can be ill afforded. Time can be saved in the morning by thoroughly rubbing down at night. Thus, with good bedding, little attention is required before hitching.

Frequent painting pays both from the standpoint of appearance and of preventing decay and rust. The twist and strain of the road tend to open the joints, letting in moisture and dust. Paint effectively seals these cracks and crevices, preventing the deterioration that is certain to follow upon neglect.

TRANSPORTATION BY AUTO-TRUCK.

The automobile truck has within the past few years been brought to such a state of efficiency and reliability as to give it a place among marketing vehicles. It offers the advantages of quick service with heavy loads over long hauls, at a maintenance cost but little higher than that of a good team and wagon. Nor does the auto require feeding through the winter. In view of the greatly increased loads, with little if any increase in wages, it would seem that this means of transportation must represent real economy. Some of our progressive producers are already using machines and as soon as it is evident that the motor truck can offer thoroughly reliable service at low cost, their use will become quite general. Philadelphia commission houses are in some cases taking up the work of hauling, sending huge cars to Jersey to gather loads from the growers. Figure 29 shows a one-ton "Autocar" hauling a load of seventy-two peach baskets from the farm of Mr. Richard Wood, of Conshohocken, Pennsylvania, to the Philadelphia market.

TRANSPORTATION BY RAIL AND WATER.

During the last few decades, as shown in the introductory paragraphs, there has been a remarkable increase in the amount of produce that is shipped a long distance. This tendency, which has by no means ceased, has occasioned the development of highly specialized facilities for rapid transportation.

Railroad lines about New York, and to a lesser extent about other cities, establish each season special schedules for the handling of fruit and truck from the farms of neighboring counties. Cars are distributed among the sidings in the morning, to be loaded in the afternoon and evening. The train crew starts at the terminus of its route, and gathers up its load, reaching the city about midnight. Teamsters then distribute the produce among the consignees. In certain sections of New Jersey, Delaware and Maryland, a very few stations give an engine all it can haul. I have in mind one branch of twelve miles on which a full train is made up every evening for the thirty mile run to Jersey City. Others are still busier; stations that are ordinarily insignificant becoming veritable marts of commerce.

With the ever-increasing network of electric lines that are penetrating almost all sections of our country, the trolley freight is destined to play a more important part in the work of marketing. Farmers will locate their packing houses by the track so that a short spur will enable a car to back up to the loading platform. Similar spurs in the wholesale centers of the cities will make possible the delivery of goods at the door of the warehouse, thus eliminating costly wagon hauls at both ends.

For comparatively short distances, the little coasting steamers offers to those who are within hauling distance of tidewater the advantages of low rates and better ventilation for the produce while in transit. Even a few hours in a close hot car are decidedly detrimental to fresh fruit or vegetables.

Mr. L. B. Hallock, of Orient, Long Island, owns a steamer with which he markets his crops. By this means he can dispose of his produce in any of the cities that lie along the coast from Boston to New York. Figure 30 shows a gasoline barge which Mr. Hallock uses for marketing during the busy season, as well as for the conveyance of supplies.

Long distance shipping requires more complicated provisions for safe carriage. Fruit or produce is no longer taken directly from field to car, but is pre-cooled in special refrigeration plants. It is then shipped in well iced cars on fast through freights which often rival passenger schedules. In hot weather, re-icing by the way becomes necessary. Fruit and truck often come North in cars that have taken meat South, thus securing better rates than if the cars had to be sent empty to the loading stations. The same cars are used in winter as their walls are well insulated and very severe weather is required to freeze the contents.

Very little has been done by way of a study of freight rates on this class of goods. It seems that in many instances excessive charges are made, both for transportation and for special service, as

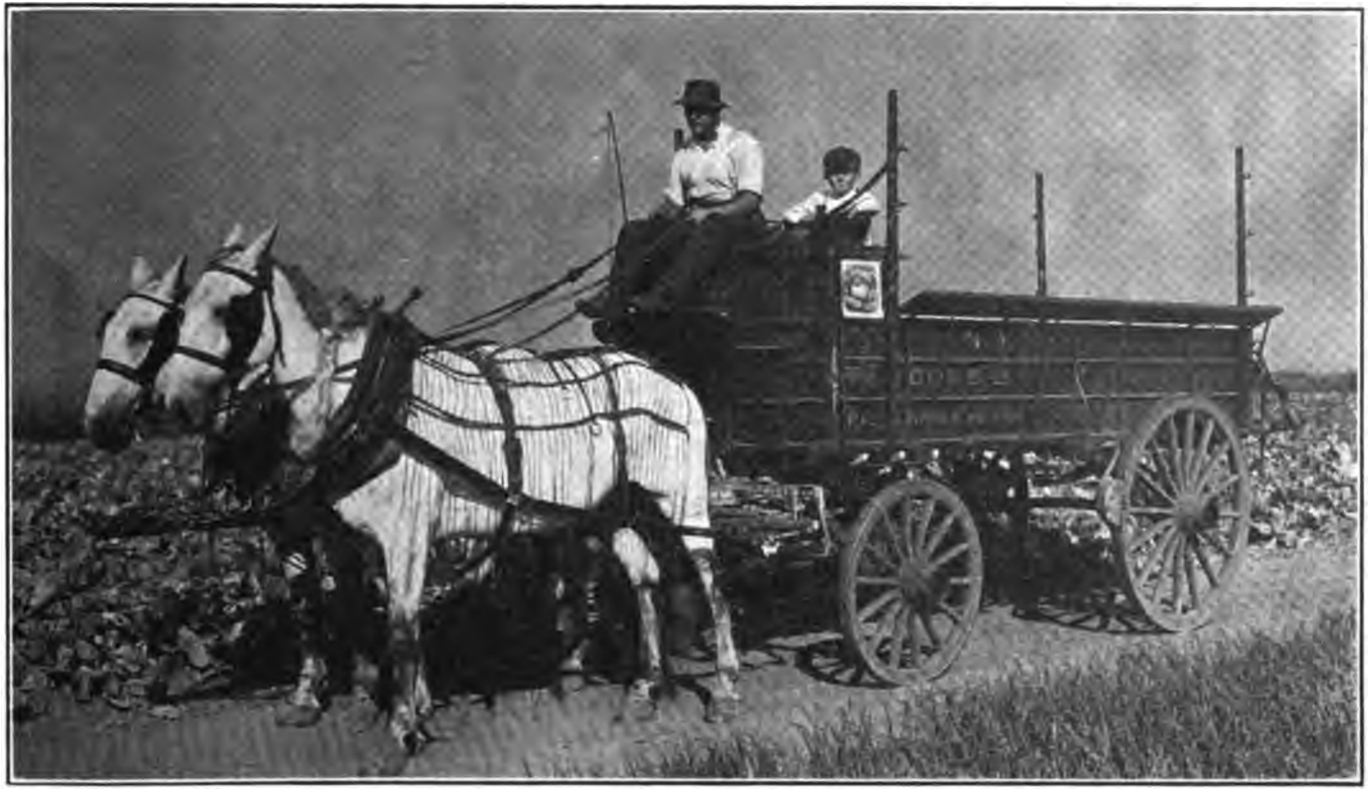


Fig. 26. A Philadelphia market wagon. (Courtesy Prof. J. P. Stewart.)

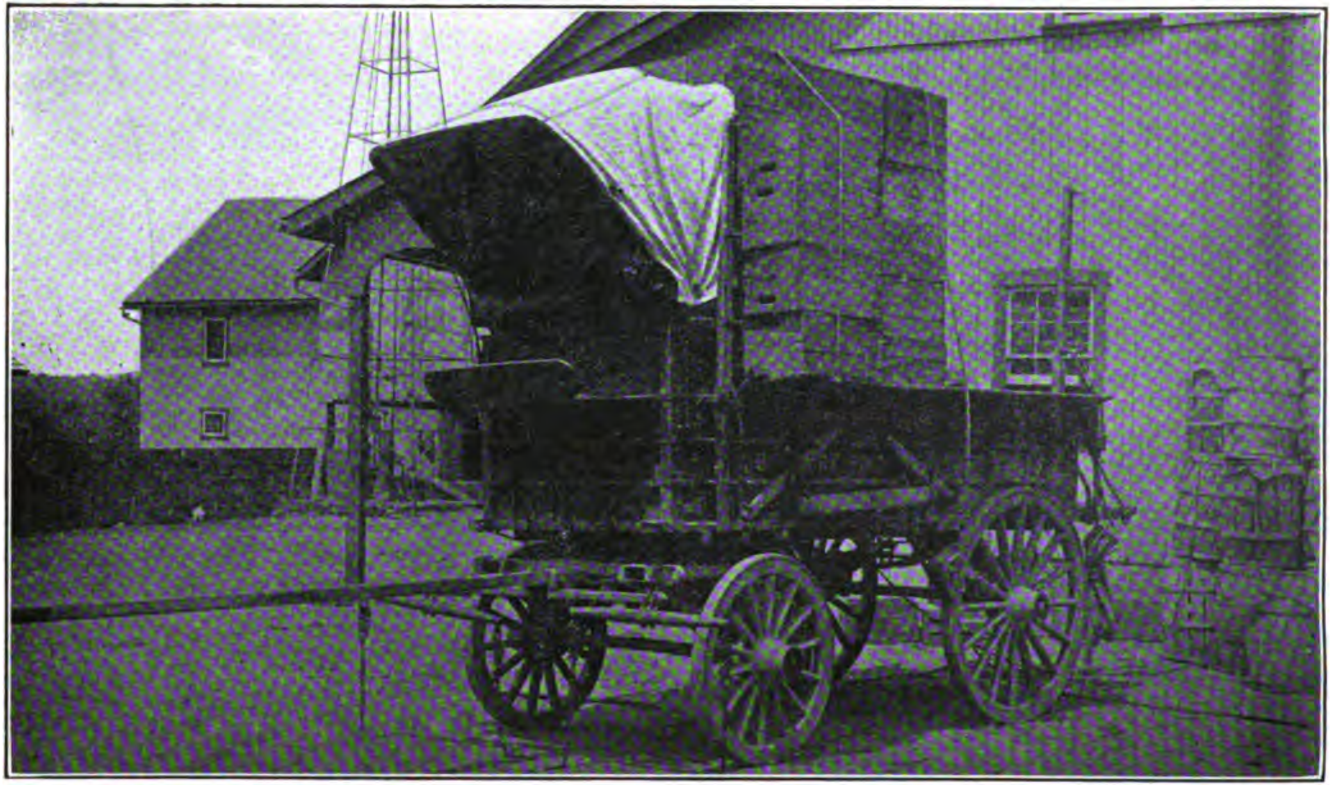


Fig. 27. Ready for a load. (Courtesy Prof. R. L. Watts.)

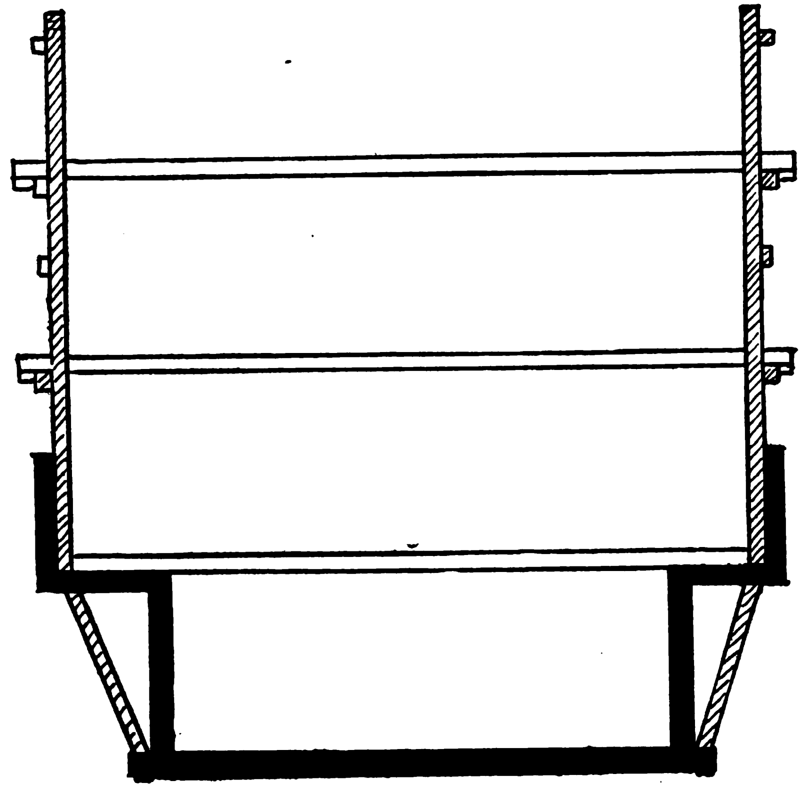


Fig. 28. Movable rack for hauling produce in baskets

for the use of refrigerator cars and for icing. It would also appear that some sections are enjoying more favorable rates than others. Here is room for a thorough investigation.

Since this paragraph was written, the Vegetable Growers' Association of America has undertaken a careful study of transportation conditions and will ere long be ready for action.

CHAPTER IV.

DISPOSITION.

IMPORTANCE.

We have so far had much to say of the advancement that has been made in the preparation and handling for market of horticultural products. All the efforts and energies and skill of the grower are exerted in activities that culminate in the selling of his crop. He might better leave his fields untilled, his crops unharvested if he has not the ability to turn those crops into gain. He must realize more than he has expended, or his efforts are fruitless. Here as before, the problem presents itself in many phases. Questions arise—questions that can only be decided in the light of an intimate knowledge of markets and methods.

TOPPING THE MARKET.

We are not producing too many vegetables, certainly not too much fruit. Profit, then, depends upon the skill of the seller in avoiding the market where abundance and low prices prevail, and in finding the market where there is scarcity and where higher prices will be realized. And, having found the right market, the grower should be able to secure the highest current price.

A regard for certain principles will be helpful in "topping the market." The first is high quality. The best is always in demand. The second is to have goods to sell when the other fellow has none. It pays to get on the market early in the season, taking advantage of high prices, and establishing a trade. On the smaller markets the customer will not quickly desert the grower who has served him early. Even if sales are made on commission in a large city, a brand soon becomes known and is looked for. Third, good varieties are more readily sold than poor ones. The flat dweller may not be able to tell much of the difference between Spy and Ben Davis apples, but if he finds that the mention of the former name brings good fruit, he will continue to ask for it, and increasing knowledge will place him past deception. The fourth point, and one of the most important of all, is familiarity with all available markets. The telephone is indispensable and should be freely used. A very slight increase in prices will pay a very large telephone bill.

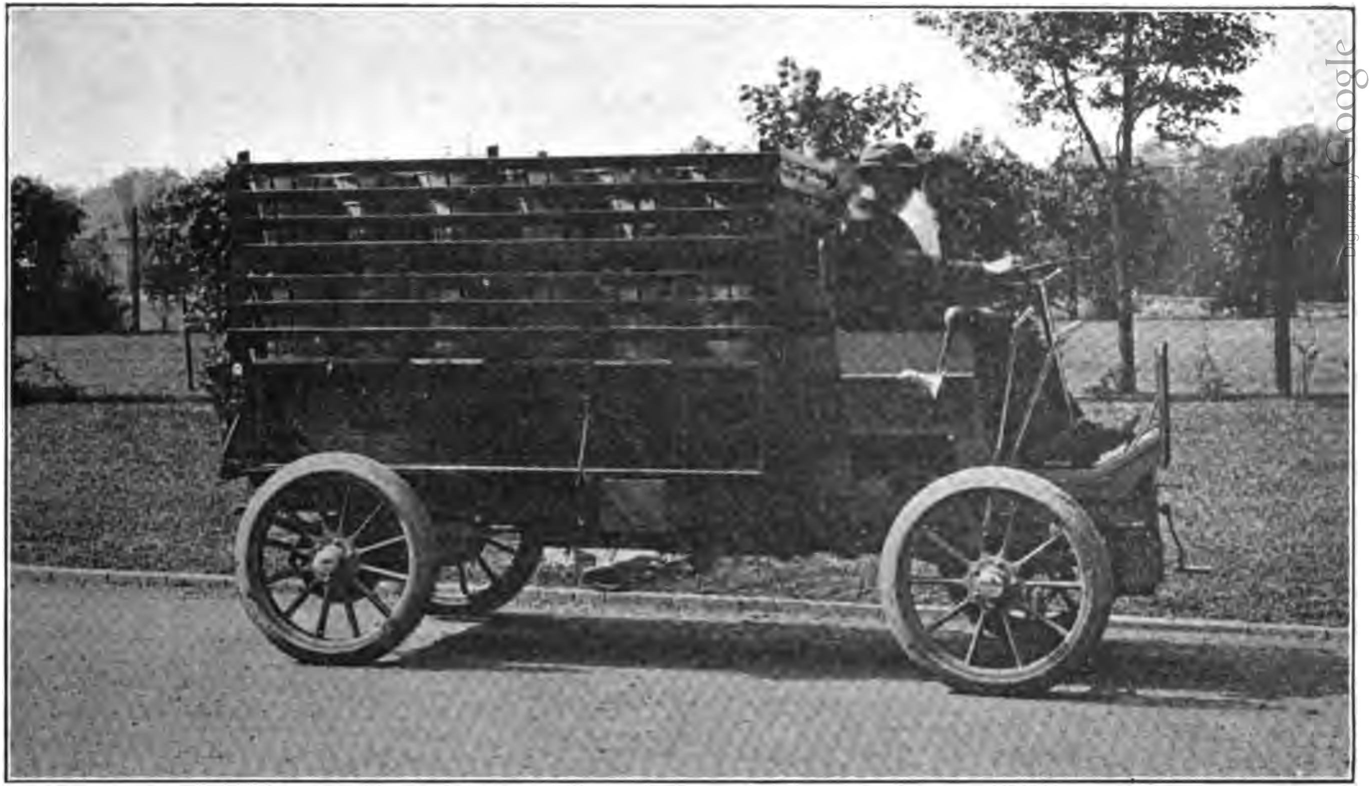


Fig. 29. The modern way. (Courtesy Auto Car Co.)

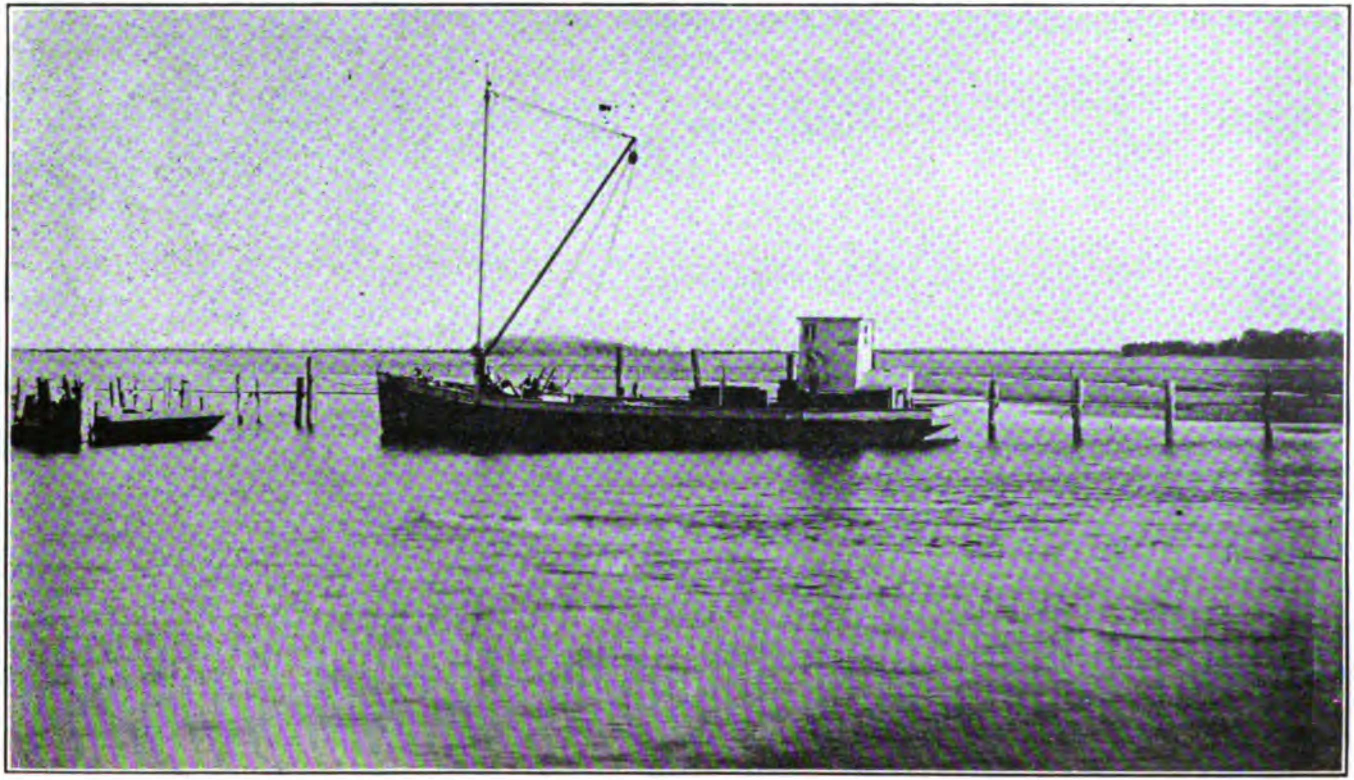


Fig. 30. A. market boat. (Courtesy Prof. R. L. Watts.)

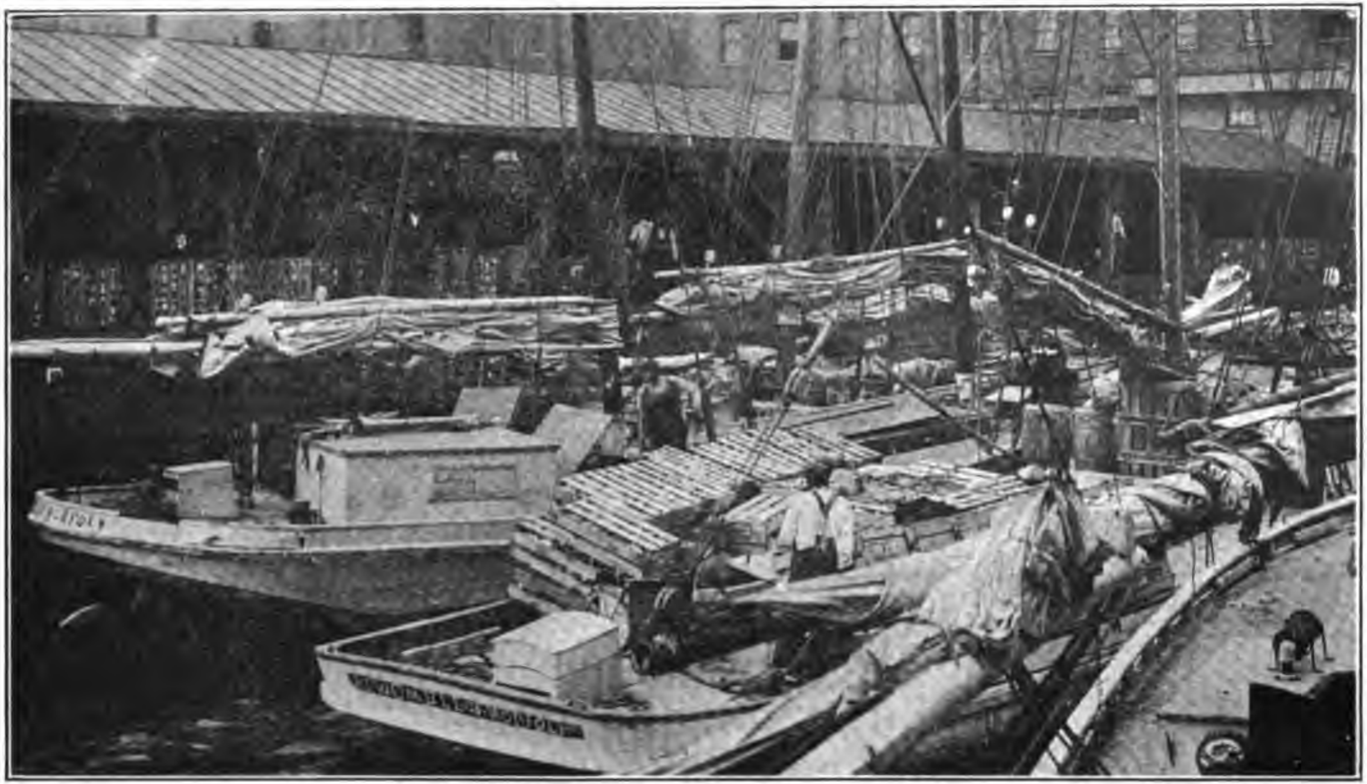


Fig. 31. Norfolk "market wagons." These have gasoline engines as well as sails. (Courtesy Prof. R. L. Watts.)

DELEGATION OF SELLING TO AGENTS.

The grower must decide whether he shall himself sell his produce or leave the task to another. The first method is impossible for the man who is distant from market, except so far as buyers come to him. It is most desirable for the man who disposes of a comparatively small quantity. Many a grower, realizing that selling is a business in itself, prefers to entrust his sales to another who makes a specialty of such work. He is thus free to devote all his energies to the activities of the farm. In the large cities it is doubtless true that the commission merchant possesses notable advantages in selling that cannot be enjoyed by the producer.

SELLING TO THE CONSUMER.

The retail trade appeals strongly to many growers who produce only on a moderately large scale. It offers splendid opportunities for the development of the niceties of marketing. Every package must please and little trade-getting devices bring prompt returns. As a reward for his trouble, the farmer takes to himself the profit of the middleman and the green grocer, as well as the profit of the producer.

It is absolutely essential that the produce present an attractive appearance to the purchaser. It must be perfectly graded and neatly arranged on the wagon. A half dozen sweet peas, or a peony with each sale costs but little and helps make a friend of the customer. Nothing counts for more in this respect than the manner of the salesman. One of the greatest drawbacks in the retail trade is the difficulty of securing good salesmen. A man must first be honest, he must put his whole heart and soul into his work, and he must be patient, cheerful and clean. Here again the employer who is able to inspire enthusiasm and loyalty is a winner. His men will get far better results in this sort of work than those who care nothing for the "old man."

The late Honorable R. W. Schwarz, of Analomink, Monroe county, Pennsylvania, was particularly successful in marketing to retail trade under unusual difficulties, or rather under difficulties that prevent most farmers from growing truck at all. Having gone to the country for his health, he soon found his strength returning and his land producing more than the small towns nearby could consume. He accordingly established wagon routes among the hotels and cottages of a neighboring summer resort region. Of recent years he had kept three teams busy covering a radius of twenty miles from his home. Prices were good and the business was highly profitable in spite of exceedingly heavy marketing expenses.

Advertising pays. Neat, catchy announcements of new vegetables and fruits are real trade-getters. People are encouraged to try products that they have not used before. They may be instructed in the merits of special varieties, or introduced to new methods of preparing for the table. Consumption of horticultural products is rapidly increasing and well directed newspaper "ads.," such as the ones shown in Figure 32, will materially aid in encouraging the tendency.

Peary and Cook

Chasing each other around the North Pole have kept it so warm that at this writing we have had no frost. Consequently we have now the finest sweet corn of the season.

Plenty of ripe and green tomatoes. Elegant celery, cauliflower, etc.

It is not time yet to store winter vegetables if you want them nice and tender, but please give us your order at once.

Apples every day.

Choice broilers and roasting chickens.

You are hungry for the goods; we are hungry for the orders; let's connect.

VALLEY FARM

L. H. SHELDON, FAIR HAVEN, VT.

Winter Vegetables

Sooner the Quicker Now

White turnips, yellow turnips, carrots, table beets 50c per bushel, five-bushel lots $2.00.

Splendid celery. Let us put a box in your celler right now.

Red and common cabbage, onions, potatoes, cauliflowers, etc.

Apples are in short supply but of course we have them, finest that can be grown.

Broilers and roasting chickens.

Any man who grumbles at the prices we make would find fault if he were to be hung.

VALLEY FARM

L. H. SHELDON, FAIR HAVEN, VT.

Fig. 32. "ADVERTISING PAYS."

Mr. H. B. Fullerton, of the Long Island Railroad Experimental Stations, has devised a method of selling "from farm to family fresh" which does away with the peddling a feature that is always more or less objectionable. He uses a crate 10 inches deep, with bottom of 10½ by 21½ and top of 13½ by 24¼ inch dimensions respectively. It holds six ordinary four-quart baskets, with a division between the two tiers. This "Home Hamper," as it is called, is packed with a variety of vegetables according to the season. The illustrations describes the Hamper far better than words. The vegetables, as is readily seen, are of the best, and are carefully packed, using paraffine paper quite freely. The Hamper is shipped direct to the family in New York, express paid upon receipt of a dollar and a half. It is its own best advertisement and it has become so popular that Mr. Fullerton is unable to meet the demand. There seem to be very few families that are not pleased with the Hamper as it is packed, although a few have standing orders for the omission of certain vegetables. The good price received makes the device a most profitable one, while it does not increase the cost of produce to the consumer.

There is a wide diversity of opinion as to the value of the Home Hamper as a marketing device. Some growers in other sections have adopted it and are enthusiastic over its merits. Others declare that

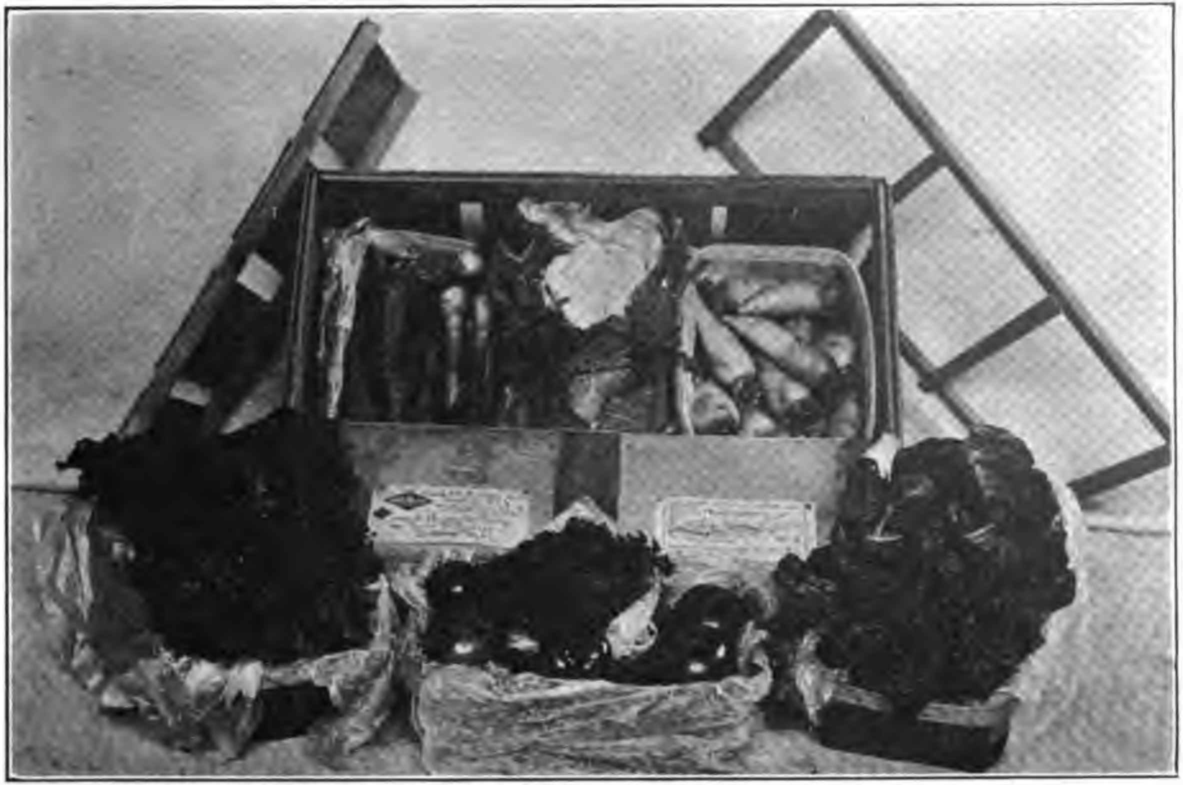


Fig. 33. The home hamper. (Courtesy H. B. Fullerton.)

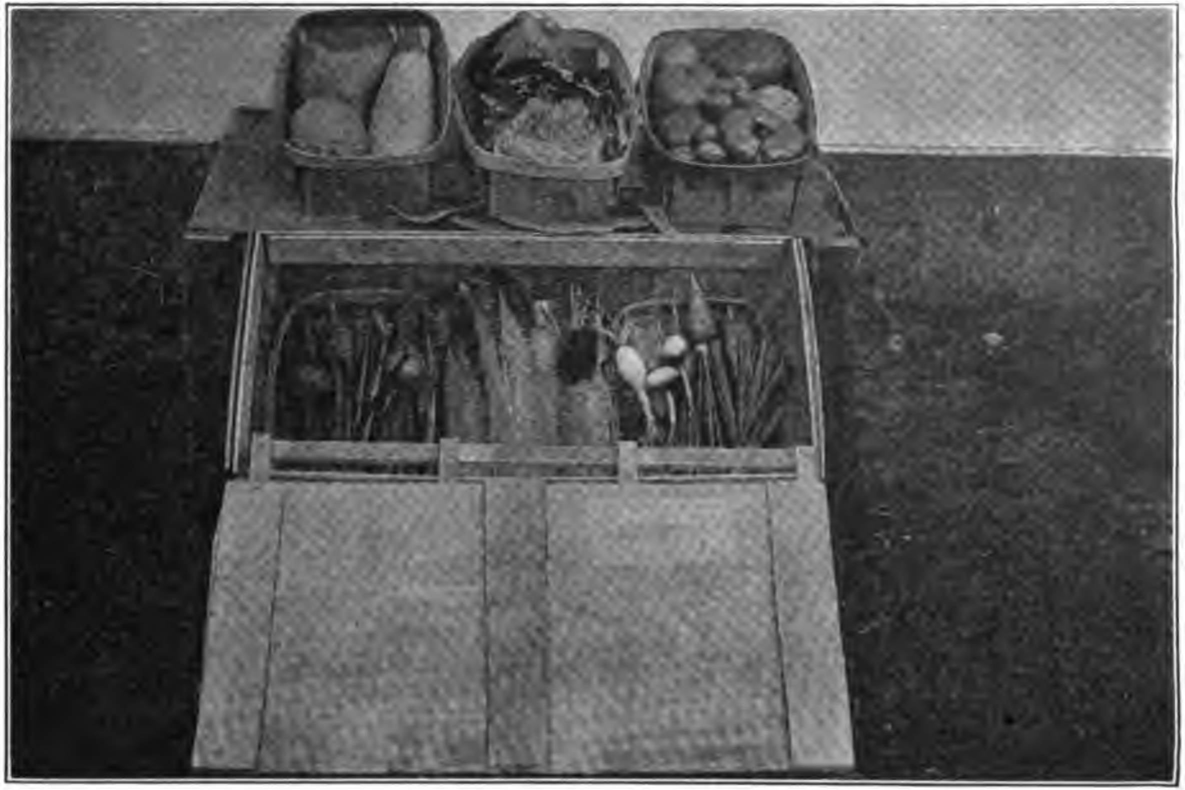


Fig. 34. Another home hamper. (Courtesy of H. B. Fullerton.)

the scheme is not practical, save under exceptional conditions. Objection is raised on the ground of inconvenience in packing a mixture of vegetables in a single container, though it is doubtless true that the extra profits much more than pay for the extra labor. It is certainly true that the hamper idea has been a great success with Mr. Fullerton, and it should be thoroughly tried out before it is condemned.

SELLING TO THE RETAIL DEALER.

The sale of farm products to the retail dealer may be said to represent the happy medium in marketing. Inconvenience is only slightly greater than when the wholesale dealer is the purchaser, and prices are considerably better. A splendid opportunity is afforded for the establishment of a valuable local trade based upon a reputation for the highest grade of produce in the best possible condition. This method of marketing is more largely practiced in the smaller cities than in the great centers, but it would doubtless be profitable to many farmers near even such large cities as New York and Philadelphia to establish routes among grocerymen, delivering goods each morning and perhaps taking orders for the next. The most serious drawback to this plan for the large producer is the difficulty in securing reliable and successful salesmen.

The shipment of fruits and vegetables to retailers in the smaller cities and towns has proved profitable to most of the very few that have tried the plan. It often happens that such places are paying comparatively high prices when the larger markets are glutted. During the summer of 1907 a western Pennsylvania grower found his city market unwilling to pay satisfactory prices for cabbage. He accordingly sent the writer on the road among the smaller towns and cities to take orders. No difficulty was experienced in selling cabbage during August at from one and a half to two cents per pound, when the wholesalers would not pay over 75 cents per barrel. After a few weeks the improvement of the city market rendered further pursuit of this course unnecessary, but it was evident that a route could be laid out to be covered in a week which would require at least three hundred barrels of cabbage alone, to say nothing of other vegetables. Such a trade would certainly grow and the salary of the salesman would be offset by a comfortable profit. The only serious drawback to this scheme is the difficulty in holding business in face of competition from local growers who trade their produce for merchandise, though this is not as formidable an objection as might appear at first sight.

SELLING TO THE WHOLESALE DEALER.

The most extensive growers prefer to sell by wagon loads and car loads, thus relieving themselves of the labor and bookkeeping incident to the disposal of their products in smaller quantities. The commission merchant takes upon himself the whole selling side of the business. The grower hauls his produce to the station or dock and in due time receives a memorandum and check covering the selling price of the consignment less freight, cartage, and commission, the latter usually ten per cent. This method of disposing of horticultural products, when perfectly carried out is doubtless one of the best. In practice, there are many weaknesses in the system, due to failings on the part of both consignor and consignee.

The maledictions of the farmer are ceaselessly hurled upon the head of the commission man, charging deceit and fraud, while the commission man berates the farmer for low quality and dishonest packing. A study of the business makes it clear that each party to the conflict leaves much to be desired by the other. The consignee certainly has abundant opportunity for fraud and there are many who care nothing for their reputation. False reports of shortage and of goods in bad order, sales in which the same dealer is both buyer and seller, and countless other schemes are practiced. The farmer handles roughly, grades poorly, packs the bottom of the basket or barrel with culls, topping with primes, indeed, has almost as many devices of dishonesty as his friend of the warehouse. He will sell on his own local market as long as prices are good, and then, when the glut comes, will ship to the commission man and expect high returns. His business methods are often unpardonably loose.

With all the mutual maledictions that are voiced in conversation, through the papers, and from the platform, many of our best growers tell of most satisfactory relations with their selling agents. In the first place, these growers are careful in their selection of a dealer. He must be honest, alert, and successful. Having made their choice, they place themselves upon pleasant business relations with him, enjoying mutual confidence. The grower does his best in growing and packing, knowing that thereby he will secure the highest prices. The dealer exerts every effort to sell his client's goods to the best advantage, in the hope that he may continue to enjoy the patronage of the producer. He knows that the slightest dishonesty or questionable return places his profits in jeopardy.

We must then conclude that the commission business is like all others. It has its men of unimpeachable honesty and it has its rogues. The farmer cannot expect to profit by fraud, nor to succeed while neglecting the precautions demanded by ordinary business

Fig. 35. Lettuce.

prudence. Nor can the dealer expect permanent success unless he inspires in his client that confidence which will enable him to make every shipment in the knowledge that his returns will be as great as the market can afford.

Laws have been advocated and government inspectors demanded, but the solution of the marketing problem lies rather in the adoption by the producer of sound business principles and the methods that bring success to the manufacturer and the merchant.

In the wholesale market quantity commands. The large producer fares best at the hands of the commission merchant. In the same way the sections that produce most heavily are able to market most advantageously. In some sections, of recent years, has been developed a method of disposing of goods that is perhaps nearly ideal. Buyers from the cities frequent the railroad stations and compete with each other in buying for cash in hand. Thus, the grower of berries may leave his farm at three o'clock, sitting on top of his day's picking of say a hundred crates. By six his team has brought him back with a snug roll of bills in his pocket, two hundred dollars being no very high price for such a load. Furthermore, he does the same thing the next day and the next. Again, the orchardist may be visited by a buyer who will contract for the whole crop on the trees, giving a certified check before picking an apple.

One of the most important tendencies in modern marketing is the development of the cooperative association, a subject worthy of a treatise as extended as this. The movement had its origin in the difficulties of the California fruit growers in securing satisfactory returns for their crops. Instead of sitting by and bemoaning their fate at the tender mercies of railroads and dealers, the producers, filled with the spirit of the West, united their forces in the fruit exchange and soon, having control of the things the people wanted, were able to command the market. The South ere long followed suit and, of recent years, the eastern producers have fallen into line. Today hardly an important producing center is without its organization for the cooperative sale of products, as well as purchase of supplies.

Space fails for the discussion of the up-to-date methods of these associations that are doing so much to better the lot of the horticulturist, of the employment of specialists as managers and salesmen, of the establishment and enforcement of standards in grading and packing, of the progress in branding and advertising, or of the constant use of the wires to keep in touch with distant markets. Nor can we consider at length the marvelous success that has followed upon their establishment, the prosperity that has enlivened decadent communities, the improvement in farm practice, the elevation of standards of county life, and all the other benefits that come with flourishing agriculture.

It is within the last few years less and less often true that a grower must dispose of even a portion of his produce at less than cost. As previously suggested, we as a nation need all of the fruits and vegetables that are annually produced. The devices of modern marketing are bringing about more and more perfect distribution, both as to place, and as to season. One agency not yet mentioned has been powerful in bringing about this result, namely, the cold storage warehouse. Fruit is gathered in the fall, graded and packed, and shipped to the city, where it is stored amongst a network of icy pipes which hold the temperature at about thirty-five degrees Fahrenheit. It is thus kept in perfect condition, at the owner's order, until a satisfactory offer is received, be it in November or the following June. During the winter just passed a grower of Adams county, Pennsylvania, realized five dollars and a half for apples, while neighbors were satisfied with two dollars and a half at the orchard.

To some extent growers have built cold storage houses of their own, although city rates are now so low that the practice is not as popular as formerly. Winter shipments are also decidedly hazardous.

CANNING AND EVAPORATING.

The canning factory has saved many a grower from loss. These establishments stand with doors open and machinery ready to begin the work of preserving as soon as the market falls to a certain point, when the grower, instead of following the city road, turns aside to the little low building at the edge of the village. True, prices are not high, yet a profit is yielded to the good farmer and he is furnished an outlet for his surplus produce. Hardly a crop but may be so utilized.

A recent number of the Market Growers' Journal is devoted to the home canner as a means of saving the surplus. True, canning is a business of itself, yet it can doubtless be made of value to many a grower who has not access to a factory. The following paragraph from the paper just mentioned summarizes the advantages of farm canning:

"It requires no skilled labor, no experienced foreman, and the grower can realize double the profits of the larger factories. The work, while requiring careful, diligent attention, is light and can be successfully carried on by women and girls, furnishing them profitable home employment, and possibly serving as an aid in the solution of the problem now so widely discussed, of how to keep the boys and girls on the farm. The outlay for the farm canner is small and the machines are extremely simple."

A Tennessee producer reports an outlay during one year of $378, not including interest, with gross returns of $974.50. The outfit need not represent an investment of over fifty dollars. Another producer states that he finds canning tomatoes more profitable than selling at fifty cents per bushel.

Evaporation of fruit offers the same advantages to the grower as canning. In the western states the produce of thousands of acres is marketed in this way.

CHAPTER V.

CONCLUSION.

We have traced the development of marketing as a means of deriving from crops the highest possible material returns. We have considered the principles that are fundamental in the art and have studied the methods that are practiced by those horticulturists who have achieved success. We have found that the solution of the problems involved in the most advantageous disposal of produce requires the widest knowledge, the most careful study, and the mastery of details well nigh innumerable, all combined with the highest business acumen.

We have seen that there is still room for progress in the future no less marvelous than the progress of the past. Many important questions remain unsettled and the majority of producers fall far short of practicing the best that is known.

The progress that has been made has brought the field nearer to the city dweller, setting his table with ever increasing variety, so that not a day of the year need go by without its offering of fruit or vegetable, fresh and crisp from garden or greenhouse. It has vastly improved the lot of the farmer, not merely swelling his bank account, but, by assuring him profitable returns, it has encouraged him to better methods of production. It has enabled him to live better, leaving more and more of the labor to his helpers, and enjoying more fully the luxuries of country life at its best. It has enabled him to give his family the advantages they deserve, relieving his wife of drudgery and educating his childen. Best of all, it has enabled him to bring up his sons and daughters in a life that they are loath to leave, preferring the independence and bounty of the country to the glittering attractions of the city.

It is for these things, then, rather than for the mere accumulation of dollars, that we welcome the marvelous advance that is being made in marketing, and we endeavor to hasten the progress of the future that the farmer may come into the full enjoyment of the heritage that is his.

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Commonwealth of Pennsylvania

DEPARTMENT OF AGRICULTURE

Bulletin No. 203

TABULATED ANALYSES OF
COMMERCIAL FERTILIZERS

From Samples Selected in Accordance
with Act of May 1, 1909

BY THE PENNSYLVANIA DEPARTMENT
OF AGRICULTURE

From August 1 to December 31, 1910

HARRISBURG:
C. E. AUGHINBAUGH, PRINTER TO THE STATE OF PENNSYLVANIA
1911

OATH OF FERTILIZER SAMPLING AGENT.

Commonwealth of Pennsylvania, ss:

Personally appeared before me, ... of ....County of ....and State of Pennsylvania, who being duly sworn according to law, doth depose and say: That he has been duly appointed an agent of the Department of Agriculture of Pennsylvania to collect samples of Commercial Fertilizers for analysis, that he is not in any way interested in the manufacture or sale of any fertilizer, and that he will perform the duties of the office with fidelity in accordance with the requirements of law to the best of his ability, and as set forth in the instructions issued by the Secretary of the Department of Agriculture, governing the sampling of fertilizers in this State.

Sworn and subscribed before me, this
.... day of ....
A. D. .... (Signed), ...
....
....

Commonwealth of Pennsylvania

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DEPARTMENT OF AGRICULTURE.
COMMONWEALTH OF PENNSYLVANIA.

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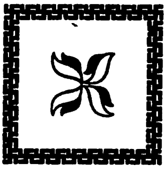

The Act of 1st May, 1909, Commonly Referred to as "The New Fertilizer Law" is as Follows:

No. 205.

AN ACT

To regulate the manufacture and sale of commercial fertilizers; prescribing penalties for its violation, and repealing an act, entitled "An act to regulate the manufacture and sale of commercial fertilizers; providing for its enforcement, and prescribing penalties for its violation," approved the twenty-fifth day of March, Anno Domini one thousand nine hundred and one.

Section 1. Be it enacted, &c., That every package of commercial fertilizer sold, offered, or exposed for sale, for manurial purposes within this Commonwealth, except the dung of domestic animals, lime, marl, and wood-ashes, shall have plainly stamped thereon the name and address of the manufacturer or importer and his place of business, the net weight of the contents of the package, the brand or trade-name of the fertilizer the package contains, and an analysis stating the percentage such fertilizer contains of nitrogen in an available form, of potash soluble in water, of soluble and reverted phosphoric acid, and of insoluble phosphoric acid.

Section 2. Every manufacturer or importer of commercial fertilizers, as specified in section one of this act, shall, on or before the first day of January of each year, or before offering them for sale in this Commonwealth, file annually with the Secretary of Agriculture a statement of the names and number of brands of such commercial fertilizers, having distinct trade-names, that he shall offer for sale during the next ensuing year, and a copy of the analysis of each one of such brands of commercial fertilizers, as required by section one of this act.

Section 3. In addition to the statement required by section two of this act, every manufacturer or importer of commercial fertilizers shall, on or before the first day of January of each year, or before offering them for sale in this Commonwealth, file annually with the Secretary of Agriculture an affidavit showing the amount of each brand of fertilizer, having a distinct trade-name, sold within the Commonwealth during the last preceding year; and if the said amount shall be one hundred tons or less, he or they shall pay or cause to be paid to the Secretary of Agriculture the sum of fifteen dollars for each and every brand of such commercial fertilizer, having a distinct trade name sold within the State during the last preceding year; and if the said amount shall exceed one hundred tons, and be less than five hundred tons, he or they shall pay the sum of twenty dollars, as aforesaid; and if the said amount shall be five hundred tons or more, he or they shall pay the sum of thirty dollars, as aforesaid. If such manufacturer or manufacturers, importer or importers, shall not have made any sales within the Commonwealth during the preceding year, he or they shall pay the sum of fifteen dollars upon each such brand, as aforesaid: Provided, That all monies so received shall be immediately paid by the Secretary of Agriculture into the State Treasury, for the use of the Commonwealth.

Section 4. No person shall sell, offer, or expose for sale, in this State, any pulverized leather, hair, ground hoofs, horns, or wool waste, raw, steamed, roasted, or in any form, as a fertilizer, or as an ingredient of a fertilizer or manure, without an explicit statement of the fact; said statement to be conspicuously affixed to every package of such fertilizer or manure, and to accompany and go with every lot, parcel, or package of the same.

Section 5. Any person or persons selling, offering, or exposing for sale, any commercial fertilizer or any brand of the same, having a distinct trade-name, without the analysis required by section one of this act, or with an analysis stating that it contains a larger percentage of any one or more of the above-named constituents than is contained therein, or for the sale of which all the provisions of sections two and three have not been complied with, or any person violating any of the provisions of section four of this act, shall be guilty of a misdemeanor, and, on conviction, shall be sentenced to pay a fine of not less than twenty-five nor more than one hundred dollars for the first offense, and not less than two hundred dollars for each subsequent offense. It shall be the duty of the Secretary of Agriculture to enforce the provisions of this act, and all penalties, costs, and fines recovered shall be paid to him or his duly authorized agent, and by him shall be immediately paid into the State Treasury, for the use of the Commonwealth.

Section 6. The Secretary of Agriculture is hereby empowered to collect samples of commercial fertilizers, either in person or by his duly qualified agent or representative, and to have them analyzed, and to publish the results for the information of the public; and for this purpose the said Secretary of Agriculture, such assistants, agents, experts, chemists, detectives, and counsel as he shall duly authorize, shall have full access, ingress, and egress to and from all places of business, factories, barns, buildings, carriages, cars, and vessels, used in the manufacture and transportation, or sale, or any commercial fertilizer. They shall also have power to open any package or vessel containing or supposed to contain any commercial fertilizer, and take therefrom samples for analysis, upon tendering the value of said samples.

Section 7. The term "commercial fertilizers," as used in this act, shall be construed to mean any and every substance imported, manufactured, prepared, or sold for fertilizing or manuring purposes, except the dung of domestic animals, marl, lime, and wood-ashes, and not exempt by the provisions of section one of this act.

Section 8. This act shall go into effect on and after the thirty-first day of July, one thousand nine hundred and nine; and the act, entitled "An act to regulate the manufacture and sale of commercial fertilizers; providing for its enforcement, and prescribing penalties for its violation," approved the twenty-fifth day of March, Anno Domini one thousand nine hundred and one, is hereby repealed.

Approved—The 1st day of May, A. D. 1909.

EDWIN S. STUART.

No. 95.

AN ACT

Making it unlawful for any person, firm, or corporation, engaged in the manufacture or sale of commercial fertilizers, to use the word "bone" in connection with, or as part of the name of, any fertilizer, or any brand of the same, unless the phosphoric acid contained in such fertilizer shall be the product of pure animal bone; and providing a penalty for violation of the same.

Section 1. Be it enacted, &c., That it shall be unlawful for any person, firm or corporation, engaged in the manufacture or sale of commercial fertilizers, to use the word "bone" in connection with, or as part of the name of, any fertilizer, or any brand of the same, unless the phosphoric acid contained in such fertilizer shall be the product of pure animal bone.

Section 2. Any person or persons violating the provisions of this act shall be deemed guilty of a misdemeanor, and, upon conviction thereof, shall pay a fine of fifty dollars for the first offense, and a fine of not less than one hundred dollars, nor more than two hundred dollars, for every subsequent offense; such fine or fines to be paid into the State Treasury, for the use of the Commonwealth. The Secretary of Agriculture shall, together with his deputies, agents, and assistants, be charged with the enforcement of this act.

Section 3. All magistrates, aldermen, and justices of the peace throughout this Commonwealth shall have jurisdiction to hear and determine actions arising from violations of the provisions of this act, and shall have authority to hold for court, or to impose the penalty hereby prescribed, subject to appeal, as the law shall direct.

Section 4. This act shall go into effect on the first day of January, Anno Domini nineteen hundred and ten.

Approved—The 23d day of April, A. D. 1909.

EDWIN S. STUART.

LETTER OF TRANSMITTAL.

State College, Pa., December 10, 1910.

Hon. N. B. Critchfield, *Secretary of Agriculture, Harrisburg, Pa.:*

Dear Sir: I have the honor to transmit herewith my report upon the analysis of the samples of commercial fertilizers received from the official sampling agents during the fall season of 1910.

Very respectfully,
WM. FREAR.

FERTILIZER ANALYSES AUGUST 1, TO DECEMBER 31, 1910.

Since August 1, 1910, there have been received from authorized sampling agents ten hundred and seventy-seven fertilizer samples, of which four hundred and eighty-seven were subjected to analysis. Preference has been given to those which have not been recently analyzed. In cases where two or more samples representing the same brand were received, equal portion from several samples were united, and the composite sample was subjected to analysis.

The samples analyzed group themselves as follows: 294 complete fertilizers, furnishing phosphoric acid, potash and nitrogen; 4 dissolved bones, furnishing phosphoric acid and nitrogen; 109 rock-and potash fertilizers, furnishing phosphoric acid and potash; 32 acidulated rock phosphates, furnishing phosphoric acid only; 29 ground bones, furnishing phosphoric acid and nitrogen, and 19 miscellaneous samples, which group includes substances not properly classified under the foregoing heads.

The determinations to which a complete fertilizer is subjected are as follows: (1) Moisture, useful for the comparison of analyses, for indication of dry condition and fitness for drilling, and also of the conditions under which the fertilizer was kept in the warehouse. (2) Phosphoric acid—total, that portion soluble in water, and of the residue, that portion not soluble in warm ammonia citrate solution (a solution supposed to represent the action of plant roots upon the fertilizer), which is assumed to have little immediate food value. By difference, it is easy to compute the so-called "reverted" acid, which is the portion insoluble in water but soluble in the citrate. The sum of the soluble and reverted is commonly called the "available" phosphoric acid. (3) Potash soluble in water—most of that present in green sand marl and crushed minerals, and even some of that present in vegetable materials such as cotton-seed meal, not being included because insoluble in water even after long boiling. (4) Nitrogen—This element is determined by a method which simply accounts for all present, without distinguishing between the quantities present in the several forms of ammonium salts, nitrates or organic matter. (5) Chlorin—this determination is made to afford a basis for estimating the proportion of the potash that is present as chlorid or muriate, the cheaper source. The computation is made on the assumption that the chlorin present, unless in excess, has been introduced in the form of muriate of potash; but doubtless there are occasional exceptions to this rule. One part of chlorin combines with 1.326 parts of potash to form the pure muriate; knowing the chlorin, it is, therefore, easy to compute the potash equivalent thereto. (7) In the case of ground bone, the state of sub-division is determined by sifting through accurately made sieves; the cost of preparation and especially the promptness of action of bone in the soil depends very largely on the fineness of its particles the finer being much more quickly useful to the plant.

The preceding paragraph sets forth the nature of the examinations given to the several classes of fertilizers under the laws in force prior to the present year. The legislation of 1909 has made needful, however, some additional tests. Sec. 4, of the Act of May 1, 1909, prohibits the sale of "pulverized leather, hair, ground hoofs, horns, or wool waste, raw, steamed, roasted, or in any form, as a fertilizer, or as an ingredient of a fertilizer or manure, without an explicit statement of the fact." All nitrogenous fertilizers have, therefore, been submitted to a careful microscopic examination, at the time of preparing the sample for analysis, to detect the presence of the tissues characteristic of the several materials above named. The act of April 23, 1909, makes it unlawful to use the word "bone" in connection with, or as part of the name of any fertilizer, or any brand of the same, unless the phosphoric acid contained in such fertilizer shall be the product of pure animal bone. All fertilizers in whose name the word "bone" appears, were therefore examined by microscopic and chemical methods to determine, so far as possible with present knowledge, the nature of the ingredient or ingredients supplying the phosphoric acid. It is a fact, however, well known to fertilizer manufacturers and which should be equally understood by the consumer, that it is, in certain cases, practically impossible to determine the source of the phosphoric acid by an examination of the finished fertilizer. The microscope shows clearly the structure of raw bone, but does not make it possible to discriminate between thoroughly acidulated bone and acidulated rock. The ratio of nitrogen to phosphoric acid in a raw bone—and only such bone as has not been deprived of any considerable proportion of its nitrogenous material by some manufacturing process can properly be called "pure animal bone"—is about 1:8; in cases where the ratio of phosphoric acid to nitrogen exceeds 8, it is clear that part, at least, of the phosphoric acid has been supplied by something else than pure animal bone; but, inasmuch as nitrogen may have been introduced in some material other than bone and no longer detectible by the microscope, the presence of nitrogen and phosphoric acid in the proportions corresponding to those of bone is not proof positive that they have been supplied by bone. Finally, the differences in the iron and silica content of bone and rock respectively, afford means of distinction useful in some cases; the usefulness of this distinction is limited, however, by the facts that kitchen bone frequently contains earthy impurities rich in iron and silica, and that earthy fillers can legally be used in fertilizers and are in fact considerably used therein both as "make-weights" and as "conditioners," or materials introduced to improve the drilling qualities of the goods. The fact that the phosphoric acid in bone and rock are identical in character is probably so well known as to require no detailed consideration of the fact in this connection.

The law having required the manufacturer to guarantee the amount of certain valuable ingredients present in any brand he may put upon the market, chemical analysis is employed to verify the guaranties stamped upon the fertilizer sacks. It has, therefore, been deemed desirable in this report to enter the guaranty filed by the manufacturer in the office of the Secretary of Agriculture, in such connection with the analytical results that the two may be compared. An unfortunate practice has grown up among manufacutrers of so wording the guaranty that it seems to declare the presence in the goods of an amount of a valuable constituent ranging from a certain minimum to a much higher maximum; thus, "Potash, 2 to 4 per cent." is a guaranty not infrequently given. In reality, the sole guaranty is for 2 per cent. The guaranteed amounts given for each brand in the following tables, are copied from the guaranties filed by the maker of the goods with the Secretary of Agriculture, the lowest figure given for any constituent being considered to be the amount guaranteed. For compactness and because no essentially important fact is suppressed thereby, the guaranties for soluble and reverted phosphoric acid have not been given separately, but are combined into a single guaranty for available phosphoric acid; in cases where the maker's guaranty does not specifically mention available phosphoric acid, the sum of the lowest figures given by him for soluble and reverted phosphoric acid is used. The law of 1879 allowed the maker to express his guaranty for nitrogen either in terms of that element or in terms of the ammonia equivalent thereto; since ammonia is composed of three parts of hydrogen and fourteen parts of nitrogen, it is a very simple matter to calculate the amount of one, when the amount of the other is given; the amount of nitrogen multiplied by 1.214 will give the corresponding amount of ammonia, and the amount of ammonia multiplied by 0.824 will give the corresponding amount of nitrogen. In these tables, the expression is in terms of nitrogen.

The laws of 1901 and 1909 abolished this alternative and required that the guaranty shall be given in terms of nitrogen. Many manufacturers after complying with the terms of the law, insert additional items in their guaranties, often with the result of misleading or confusing the buyer; the latter will do well to give heed to those items only that are given as the law requires and that are presented in these tables:

A summary of the analyses made this season may be presented as follows:

Summary of Analyses Made this Season.

	Complete.	Rock and potash.	Dissolved bone.	Dissolved rock.	Ground bone.
Number of analyses,	294	109	4	32	29
Moisture, per cent.,	9.11	9.21	8.28	8.23	5.20
Phosphoric acid:					
Total, per cent.,	9.72	11.01	14.02	15.56	22.66
Soluble, per cent.,	4.74	6.14	7.07	10.05	---------
Reverted, per cent.,	3.42	3.84	4.00	4.22	---------
Insoluble, per cent.,	1.56	1.03	2.95	1.29	---------
Potash, per cent,	3.52	3.99	---------	---------	---------
Nitrogen, per cent.,	1.29	---------	2.01	---------	3.21
Mechanical analyses of bone:					
Fine,	---------	---------	---------	---------	65.
Coarse,	---------	---------	---------	---------	35.
Commercial valuation:					
Average selling price,	21.76	16.38	25.80	14.01	29.98
Commercial value of samples whose selling price is ascertained,	22.24	16.34	25.70	14.15	31.10

"For the purpose of indicating more specifically to the eye, cases deficient in guarantee, an asterisk has been affixed in the analytical tables where the ingredient has been found less in quantity than the manufacturer guaranteed. Too great emphasis should not be placed upon very slight deficiencies, because very slight imperfections in mixing and slight variations in analysis are practically unavoidable. The asterisk has been used, therefore, only in cases where the deficiencies amount to 0.2 per cent. or more, except where nitrogen has been guaranteed in amounts not higher than 1.0 per cent. in which case an asterisk has been affixed where the deficiency amounts to 0.1 per cent. or more."

The cases of departure of goods from their guaranteed composition observed this season, including only those cases in which it amounted to two-tenths per cent, or more, were as follows:

Summary of Instances of Deficiency from Guaranty.

	Complete.	Rock and potash.	Dissolved bone.	Dissolved rock.	Ground bone.
Deficient in four constituents,	1	---------	---------	---------	---------
Deficient in three constituents,	7	1	---------	---------	---------
Deficient in two constituents,	33	9	---------	1	1
Deficient in one constituent,	68	30	1	1	7
Total number of samples in which deficiencies occur,	104	40	1	2	8

The cases of deficiency noted during the past ten seasons in goods as compared with their guaranties expressed in percentage of the total number of goods of each class analyzed, are as follows:

Percentage of Deficiency 1906-1910.

	Spring, 1906.	Fall, 1906.	Spring, 1907.	Fall, 1907.	Spring, 1908.	Fall, 1908.	Spring, 1909.	Fall, 1909.	Spring, 1910.	Fall, 1910.
Complete fertilizers,	45.4	39.5	39.4	39.3	40.0	40.0	39.5	46.3	28.9	35.9
Dissolved bone,	50.0	28.5	16.6	25.0	†50.0	16.6	25.0	*	37.5	25.0
Rock and potash,	42.4	40.0	43.7	49.0	39.0	33.3	36.2	30.4	25.2	37.0
Dissolved rock,	28.8	25.6	19.5	27.0	21.2	28.5	33.3	19.5	4.3	6.3
Ground bone,	49.0	14.7	18.5	27.8	33.0	40.0	20.8	33.4	29.17	27.6
All classes except miscellaneous,	43.8	35.8	36.1	33.9	33.3	33.3	37.6	39.6	26.5	33.5

*Only two samples analyzed for which no guarantees are reported.
†Only two samples analyzed for which guarantees are recorded.
‡Only four samples analyzed.

A comparison of the average composition of all samples of complete fertilizers for which guaranties are recorded with the average of the corresponding guaranties, for several seasons past including those of this season, follows:

Average Composition and Guaranty Compared.

	Average composition. Per cent.	Average guaranty. Per cent.
Spring, 1906.		
Phosphoric acid:		
Total,	9.73	9.21
Available,	7.88	7.77
Potash,	4.21	3.95
Nitrogen,	1.57	1.53
Fall, 1906.		
Phosphoric acid:		
Total,	10.45	9.70
Available,	8.23	8.16
Potash,	3.12	2.95
Nitrogen,	1.32	1.31
Spring, 1907.		
Phosphoric acid:		
Total,	9.21	8.50
Available,	8.13	7.83
Potash,	4.55	4.31
Nitrogen,	1.52	1.47
Fall, 1907.		
Phosphoric acid:		
Total,	10.39	9.42
Available,	8.34	8.07
Potash,	3.18	2.72
Nitrogen,	1.39	1.29
Spring, 1908.		
Phosphoric acid:		
Total,	10.07	8.91
Available,	8.29	7.61
Potash,	5.04	4.51
Nitrogen,	1.64	1.59
Fall, 1908.		
Phosphoric acid:		
Total,	10.29	9.31
Available,	8.29	7.96
Potash,	3.24	2.94
Nitrogen,	1.24	1.23
Spring, 1909.		
Phosphoric acid:		
Total,	9.83	8.98
Available,	8.07	7.66
Potash,	5.07	4.89
Nitrogen,	1.67	1.60
Fall, 1909.		
Phosphoric acid:		
Total,	10.13	9.34
Available,	8.27	8.06
Potash,	3.41	3.12
Nitrogen,	1.33	1.26

Average Composition and Guaranty Compared—Continued.

	Average composition. Per cent.	Average guaranty. Per cent.
Spring, 1910.		
Phosphoric acid:		
Total,	9.80	8.80
Available,	8.26	7.62
Potash,	5.20	4.68
Nitrogen,	1.68	1.60
Fall, 1910.		
Phosphoric acid:		
Total,	9.72	8.37
Available,	8.16	7.47
Potash,	3.52	3.09
Nitrogen,	1.29	1.22

It is of interest to note how closely the series of valuations based upon the wholesale price of raw materials in the principal markets during the most important buying season and upon certain average allowances for expenses and profits on the part of the mixer and jobber, coincides with the retail prices later ascertained. A comparison for several seasons past is given below:

Comparison of Selling Price and Valuation, 1903-1910.

	Selling price.	Valuation.	Excess of valuation over selling price.
Complete fertilizers:			
1903, Spring,	24.57	24.15	—.42
Fall,	21.98	22.77	.79
1904, Spring,	24.28	24.99	.71
Fall,	21.82	22.53	.71
1905, Spring,	24.63	25.60	.97
Fall,	21.39	22.35	.96
1906, Spring,	23.55	24.76	1.21
Fall,	21.87	22.99	1.12
1907, Spring,	24.60	26.84	2.24
Fall,	22.71	24.59	1.88
1908, Spring,	25.69	26.23	.54
Fall,	22.34	23.88	1.54
1909, Spring,	24.88	25.31	.43
Fall,	22.07	22.25	.14
1910, Spring,	25.26	26.23	1.43
Fall,	21.76	22.24	.48

Comparison of Selling Price and Valuation, 1903-1910—Continued.

	Selling price.	Valuation.	Excess of valuation over selling price.
Dissolved Bone:			
1903, Spring,	31.17	30.87	—.30
Fall,	23.67	24.57	.90
1904, Spring,	31.50	28.42	—3.08
Fall,	24.94	27.77	2.83
1905, Spring,	23.83	22.70	—1.13
Fall,	24.78	25.85	1.11
1906, Spring,	24.40	22.65	—1.75
Fall,	22.06	25.33	3.27
1907, Spring,	22.28	25.08	2.80
Fall,	22.09	27.01	4.92
1908, Spring,	21.11	23.09	1.98
Fall,	22.48	26.05	3.57
1909, Spring,	22.25	21.57	—.68
Fall,	24.50	22.85	-1.65
1910, Spring,	22.17	21.47	—.70
Fall,	25.80	25.70	—.10
Rock and Potash:			
1903, Spring,	17.20	14.74	—2.46
Fall,	15.96	14.86	—1.10
1904, Spring,	16.47	15.46	—1.01
Fall,	15.89	14.92	—.97
1905, Spring,	16.11	15.49	—.62
Fall.	15.97	15.04	—.97
1906, Spring,	16.17	15.19	—.98
Fall.	15.76	15.06	—.70
1907, Spring,	16.94	16.53	—.41
Fall,	16.58	15.82	—.76
1908, Spring,	16.86	16.24	—.62
Fall,	16.43	16.17	—.26
1909, Spring,	16.98	15.94	1.04
Fall,	16.10	15.50	—.60
1910, Spring,	17.16	16.08	—1.08
Fall,	16.38	16.34	—.04
Dissolved rock:			
1903, Spring,	15.13	13.34	—1.79
Fall,	14.64	13.12	—1.52
1904, Spring,	14.59	14.05	—.54
Fall,	13.89	14.09	.20
1905, Spring,	13.64	13.86	.22
Fall,	12.21	13.51	1.30
1906, Spring,	13.75	12.98	—.77
Fall,	13.45	12.99	—.46
1907, Spring,	14.04	14.72	.68
Fall,	14.16	14.67	.51
1908, Spring,	14.72	14.92	.20
Fall,	14.31	14.86	.55
1909, Spring,	14.76	13.62	—1.14
Fall,	13.86	14.02	.16
1910, Spring,	14.56	14.00	—.56
Fall,	14.01	14.15	.15
Ground bone:			
1903, Spring,	28.67	27.25	—1.42
Fall,	27.52	27.07	—.45
1904, Spring,	28.20	27.70	—.50
Fall,	27.02	27.97	.95
1905, Spring,	29.08	26.72	—2.36
Fall,	27.70	28.70	1.00
1906, Spring,	29.02	28.23	—.79
Fall,	27.80	29.12	1.32
1907, Spring,	31.55	29.64	—1.91
Fall,	28.92	28.80	—.12
1908, Spring,	29.04	28.96	—.08
Fall,	28.18	27.90	—1.28
1909, Spring,	30.70	30.28	—.42
Fall,	29.39	28.71	—.68
1910, Spring,	30.19	30.27	.08
Fall,	29.98	31.10	1.12

MATERIAL USED IN FERTILIZERS.

The following observations on this head, were made respecting the fertilizers analyzed in the Spring of 1910. They apply equally well to those examined this Fall season.

"The microscopic examination of the nitrogenous fertilizers for leather, hair, and other materials the use of which without notice is prohibited by the Act of May 1, 1909, revealed in no case such quantity of any of these substances as might not fairly be regarded as an accidental trace. No instance has been reported by the sampling agents in which a declaration of the presence of such material has been made. It is, however, a matter of quite general knowledge that substances of this kind are being largely used in fertilizer mixtures; but, in most cases at least, only after such treatment as results in the destruction of the characteristic tissues and, at the same time, wholly or partly in that of the organic compounds originally present. The Pennsylvania Agricultural Experiment Station is now conducting, under the writer's supervision, an investigation to determine the degree to which the acid treatment usually employed improves the availability of the nitrogen in these substances.

In conformity with the requirements of the Act of April 23, 1909, many firms dropped from the brand names of goods manufactured by them the word "bone" hitherto forming part of said names. Where such change in name appears, it may be taken as evidence that the phosphoric acid is derived, at least in part, from something else than bone. In several cases where the word "bone" remains in the brand name, the composition of the goods makes it clear that the law has been violated. All such cases have been reported for legal action."

ORGANIZATION OF THE WORK.

In conclusion, I would state that the work of the season has been performed under my direction, as follows:

The nitrogen determinations by W. Thomas, B. S.; those of total phosphoric acid by J. W. White, B. S.; of soluble and insoluble phosphoric acid by H. D. Edmiston and L. G. Willis, B. S.; of potash, by E. S. Erb, M. S.; and the preparation of samples, care of records, and the detail of the compilation of this bulletin, by G. C. Given, M. S. To these trained and experienced assistants, my acknowledgments are due for loyal and efficient service.

COMPLETE

Furnishing Phosphoric Acid,

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.	Phosphoric	
				Soluble in water.	Reverted.
	ALLENTOWN MANUFACTURING CO., ALLENTOWN, PA.				
2641	**Complete Phosphate,	P. S. Fenstermacher, Supt., Schnecksville.	9.92	*3.40	4.08
2643	††Special $25.00 Phosphate,	Oscar Zechlar, Orefield,	16.47	*2.73	4.00
	AMERICAN AGRICULTURAL CHEM. CO., NEW YORK.				
2019	Chicopee Farmers' Reliable,	L. M. Althouse, Kintnersville,	11.70	5.07	2.72
1926 2336 2675	†Dead Shot Phosphate,	F. P. Spring, Muncy, C. B. Reppert, Shoemakersville. Levi Berkey, Somerset,	10.29	5.39	3.39
1858 2014 2623	†Lion Crop Grower,	Aaron Hostetter, Aaronsville, Am. Agr. Chem. Co., Doylestown. John H. Reed, Roedersville,	11.75	6.18	2.55
2647	Superior Compound,	Greenawalt & Bennegoff,, New Tripoli.	10.00	5.97	2.71
2107	Canton Chemical Baker's Fish Guano.	M. G. Adams, Paxinos,	13.07	6.55	1.65
1927 2004 2465	†Canton Chemical Baker's Standard High Grade Guano.	F. P. Spring, Muncy, John B. Buckman, Newtown, W. B. Winney, Middleburg,	12.32	6.11	3.53
2426	Canton Chemical Baker's Harrow Brand Crop Grower.	Wm. Gates' Est., Kittanning,	7.19	5.55	3.12
2106	Clark's Cove Defiance Fertilizer,	M. G. Adams, Paxinos,	7.80	4.09	3.02
2857	Crocker's New Rival Fertilizer,	Geo. M. Crowl, Fair Mont,	11.89	7.18	2.41
2340 2389 2674	†Detrick's Imperial Compound,	John Sheidy, Hamburg, Newton Gonder, Boswell, Levi Berkey, Somerset,	12.05	6.64	2.20
2388	Deitrick's Royal Crop Grower,	Newton Gonder, Boswell,	11.95	6.06	2.37
1918 2348 2459	†Great Eastern Wheat Special,	J. E. Defrain, Collomasville, Wm. J. Johnson, Sinking Springs. W. E. Smith, Milmont,	11.90	6.25	2.37
2069	Maryland Ammoniated Phosphate,	J. A. Gass, Sunbury,	11.47	6.43	2.16
2070 2609	†Maryland O. K. Ammoniated Fertilizer.	J. A. Gass, Sunbury, L. R. Over, New Enterprise,	10.17	6.86	2.81
1859	Milsom's Buffalo Guano,	Aaron Hostetter, Annville,	11.22	5.76	2.42
1873 2119 2489	†Moro-Phillip's C. & G. Complete Fertilizer.	S. K. & Levi Donkle, Myerstown. Zehner Bros., Bloomsburg, Ewing Kinslow, Newton Hamilton.	10.37	5.93	2.29
1869 2120	†Moro-Phillip's Farmers' Phosphate,	S. K. & Levi Donkle, Myerstown. Zehner Bros., Bloomsburg,	9.63	4.56	3.21
2660	Moro-Phillip's Pure Phuine,	N. D. Hunsicker, Snyders,	9.09	6.15	2.51
1870 2659	†Moro-Phillip's Special Fertilizer,	S. K. & Levi Donkle, Myerstown. N. D. Hunsicker, Snyders,	9.36	5.27	3.22
1871 2054 2487	†Moro-Phillip's Standard Guano,	S. K. & Levi Donkle, Myerstown. Eli Yost, McEwensville, J. Irvin Goss, Pointersville,	11.41	6.06	2.48

**Guaranteed soluble phosphoric acid 6: insoluble, 4.
††Guaranteed soluble phosphoric acid 6; insoluble 2.
†Composite sample.

FERTILIZERS.

Potash and Nitrogen.

Acid in 100 Pounds.					Potash in 100 Pounds.				Nitrogen in 100 lbs.		Computed commercial value of 2,000 pounds at Department rating.	Selling price of 2,000 pounds at point of selection.	Sample number.
	Total.		Available.				Total.						
Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.			
2.58	10.01	10.00	7.43	-------	4.25	-------	4.25	4.00	1.56	1.50	24.96	25.00	2641
.91	*7.64	8.00	6.73	-------	3.30	-------	*3.30	4.00	1.28	.75	21.62	-------	2643
1.62	9.41	8.00	7.79	7.00	1.30	-------	1.30	1.00	.94	.82	19.16	20.25	2019
1.08	9.86	9.00	8.78	8.00	2.27	-------	2.27	2.00	.51	.41	18.60	17.00 16.50 17.00	1926 2336 2675
1.29	10.02	9.00	8.73	8.00	5.87	-------	5.87	6.00	1.68	1.65	28.27	------ 24.00 25.00	1858 2014 2623
1.47	10.15	9.00	8.68	8.00	4.12	-------	4.12	4.00	1.72	1.65	26.52	23.00	2647
.94	9.14	9.00	8.20	8.00	2.71	-------	2.71	2.00	1.61	1.65	23.96	24.00	2107
1.21	9.85	9.00	8.64	8.00	3.48	-------	3.48	3.00	2.15	2.06	27.91	25.00 32.00 26.00	1927 2004 2465
2.08	10.75	9.00	8.67	8.00	2.15	-------	2.15	1.00	1.10	.82	21.86	21.00	2426
1.06	8.17	8.00	7.11	7.00	1.23	-------	1.23	1.00	1.01	.82	18.28	20.00	2106
1.34	10.93	10.00	9.59	9.00	2.16	-------	2.16	2.00	1.42	1.23	24.04	20.00	2857
1.40	10.24	9.00	8.84	8.00	2.27	-------	2.27	2.00	.95	.82	21.22	17.00 18.50 19.00	2340 2389 2674
1.12	9.55	9.00	8.43	8.00	2.53	-------	2.53	2.00	1.86	1.65	25.38	22.00	2388
1.16	9.78	9.00	8.62	8.00	2.40	-------	2.40	2.00	1.73	1.65	24.86	24.00 24.00 ------	1918 2348 2459
1.13	9.72	9.00	8.59	8.00	3.26	-------	3.26	3.00	1.77	1.65	25.88	26.00	2069
1.22	10.39	9.00	9.17	8.00	2.23	-------	2.23	2.00	.89	.82	21.19	22.00 20.00	2070 2609
1.64	9.82	9.00	8.18	8.00	4.24	-------	4.24	4.00	.88	.82	22.36	-------	1850
1.28	9.50	9.00	8.22	8.00	2.29	-------	2.29	2.00	.89	.82	19.11	21.00 19.50 18.00	1873 2119 2489
1.05	8.82	8.00	7.77	7.00	1.21	-------	1.21	1.00	.84	.82	18.20	17.50 17.50	1869 2120
1.60	10.26	9.00	8.66	8.00	3.31	-------	3.31	3.00	1.66	1.65	25.51	22.00	2660
1.58	10.07	9.00	8.49	8.00	3.30	-------	3.30	3.00	2.13	2.06	27.58	24.00 23.00	1870 2659
1.30	9.84	9.00	8.54	8.00	4.06	-------	4.06	4.00	.86	.82	22.17	20.00 21.00 22.00	1871 2054 2487

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*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.	Phosphoric	
				Soluble in water.	Reverted.
2228	Northwestern 10% Potato Fertilizer,	John W. King, York Springs,	10.37	6.67	1.99
2124	†Quinnipiac Climax Phosphate,	W. I. Leister, Cocolamus,	11.44	6.45	1.86
2419		J. L. Culp, Indiana,			
2010	†Reese's Half and Half,	Benjamin Hall, Doylestown,	9.79	4.19	4.09
2310		Emanuel Hoffman, West York.			
2350		H. J. Haldeman, Sinking Springs.			
2774	Reese's Harvest Queen,	S. H. Wolf, Stevens,	12.04	5.55	2.90
2303	†Reese's Mayflower,	J. F. Goodling, Logansville,	13.22	6.37	2.76
2362		A. G. Houtz, Myerstown,			
1968	Reese's Pilgrim Fertilizer,	Geo. W. Weber, Richland,	10.50	6.11	2.39
1887		N. R. Wolf, Fishertown,			
2326		James C. Berger, Mohrsville,			
2477	†Susquehanna Animal Phosphate,	Jack Klinger, Windfield,	9.70	5.57	3.19
2823		H. P. Passmore & Bros., Kelton.			
2284	†Allen's Special for Wheat and Grass.	H. W. Berg, East Prospect,	11.65	8.53	4.21
2169		Harvey Detweiler, Chester Springs.			
2534		David Hanshaw, Paxtonia,			
2285	†Tygert-Allen's Star Brand Phosphate.	H. W. Berg, East Prospect,	11.77	6.37	2.62
2803		Harvey Detweiler, Chester Springs.			
1908	†Wheeler's Royal Wheat Grower,	J. A. Gummo, Salona,	6.24	6.12	2.28
1816		Boyd Noll, Zion,			
2367		Samuel S. Brightbill, Myerstown.			
2078	Williams & Clark's Americus High Grade Special Fertilizer.	P. D. Berdett, Milan,	6.68	6.71	2.63
2427	†Williams & Clark's Prolific Fertilizer.	McConnell & Lukor, Kittanning.	10.90	5.48	2.31
2728		C. F. Thompson, Beaver Falls, R. D. 4.			
1993	Williams & Clark's Royal Phosphate.	J. Clarence Bonsal, Elwyn,	10.95	6.62	2.57
2541	Zell's Ammoniated Superphosphate,	O. F. Arnold, Dillsburg,	10.56	6.67	2.57
2074	Zell's Economizer Phosphate,	C. E. Drake, Athens,	4.66	7.20	1.85
2701	†Zell's Hustler Phosphate,	J. Lyman Snyder, Eldersville,	12.65	6.88	4.37
2297		G. B. Murphy, Red Lion,			
2752		Chas. T. Wills & Co., Parnassus.			
	AMERICAN FERTILIZER CO., BALTIMORE, MD.				
2293	American Eagle Crop Grower,	H. W. Berg, Red Lion,	9.09	5.82	2.51
2391	American Excelsior Guano,	N. H. Blough, Davidsville,	11.74	6.44	2.17
2302	American Fish & Bone Compound,	N. H. Blough, Davidsville,	11.16	6.04	2.65
2292	Ammoniated Crop Compound,	H. W. Berg, Red Lion,	10.69	5.90	2.86
	AMERICAN REDUCTION CO., PITSBURG, PA.				
2394	Century Phosphate and Potash,	D. C. Cline, New Alexander,	8.69	1.60	4.44
	ARMOUR FERTILIZER WORKS, BALTIMORE, MD.				
2082	Fruit and Root Crop Special,	G. S. Walker, Tioga,	7.58	6.37	2.18
2417	Grain Grower,	Frank Douglass, Indiana,	9.91	4.72	3.64
2557	Royal Ammoniated,	Diehl, Omwake Diehl, Chamburg.	6.80	5.04	3.04
2174	Special Mixture,	Shapin & Bros., Orbesonia,	7.39	5.98	2.46
1860	†Wheat and Grass Special,	J. H. Frank, Annville,	8.16	4.70	2.50
2602		C. S. Shipman, Hughsville,			

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†Composite sample.

LIZERS—Continued.

Acid in 100 Pounds.					Potash in 100 Pounds.				Nitrogen in 100 lbs.		Computed commercial value of 2,000 pounds at Department rating.	Selling price of 2,000 pounds at point of selection.	Sample number.
	Total.		Available.				Total.						
Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.			
.89	9.55	9.00	8.66	8.00	10.79	-------	10.79	10.00	1.97	1.65	34.32	30.00	2228
1.12	9.43	9.00	8.31	8.00	2.24	-------	2.24	2.00	1.04	1.08	21.06	20.00 22.00	2124 2419
1.34	9.62	8.00	8.28	7.00	1.44	-------	1.44	1.00	.91	.82	19.31	18.00 17.40 19.75	2010 2310 2350
1.43	9.88	9.00	8.45	8.00	2.32	-------	2.32	2.00	1.20	1.03	21.99	20.00	2774
1.26	10.39	9.00	9.13	8.00	2.28	-------	2.28	2.00	1.72	1.65	25.06	19.50 22.00	2308 2362
1.26	9.76	9.00	8.50	8.00	4.49	-------	4.49	4.00	.91	.82	22.81	------ 21.25 22.00	1968 1887 2326
4.73	13.49	10.00	8.76	9.00	2.47	-------	2.47	2.00	1.71	1.65	26.41	------ 26.00	2477 2823
.99	8.73	8.00	7.74	7.00	1.50	-------	1.50	1.00	.93	.82	18.85	17.00 21.00 18.00	2284 2169 2534
1.31	10.30	9.00	8.99	8.00	3.36	-------	3.36	3.00	2.25	2.06	28.65	24.00 26.00	2285 2803
1.29	9.69	9.00	8.40	8.00	2.33	-------	2.33	2.00	.99	.82	20.93	20.00 20.00 21.30	1908 1816 2367
1.78	11.12	9.00	9.34	8.00	7.26	-------	7.26	7.00	3.28	3.29	38.25	31.00	2078
1.34	9.13	8.00	7.79	7.00	1.43	-------	1.43	1.00	1.04	.82	19.71	22.00 20.10	2427 2728
1.52	10.71	9.00	9.19	8.00	2.33	-------	2.33	2.00	1.23	1.03	23.65	21.00	1993
1.12	10.36	9.00	9.24	8.00	2.11	-------	2.11	2.00	1.68	1.65	24.92	22.00	2541
2.18	11.23	9.00	9.05	8.00	2.00	-------	2.00	2.00	1.05	.82	22.09	23.00	2074
.22	11.47	10.00	11.25	9.00	3.14	-------	3.14	3.00	.97	.82	23.90	23.00 18.50 26.00	2701 2297 2752
1.58	9.41	9.00	7.88	8.00	2.10	-------	2.10	2.00	1.73	1.65	23.84	21.00	2293
1.08	9.69	9.00	8.61	8.00	5.08	-------	5.08	5.00	1.75	1.65	25.17	24.00	2391
.93	9.62	9.00	8.69	8.00	3.07	.07	3.14	3.00	1.52	1.65	24.32	22.60	2392
1.41	10.17	9.00	8.76	8.00	2.12	-------	2.12	2.00	1.06	.82	21.37	19.00	2292
1.76	*7.80	8.00	*6.04	7.00	4.57	-------	4.57	4.00	1.33	1.23	22.36	23.00	2394
.69	9.24	8.50	8.55	8.00	1.33	3.81	5.14	5.00	1.75	1.65	28.05	30.00	2082
1.35	9.71	8.50	8.86	8.00	2.66	-------	2.66	2.00	1.71	1.65	24.49	25.00	2417
.61	8.69	8.50	8.08	8.00	4.45	-------	4.45	4.00	.96	.82	22.17	18.50	2557
.13	8.57	8.50	8.44	8.00	1.39	-------	1.39	1.00	.54	.41	17.35	18.00	2174
.83	8.03	7.50	7.20	7.00	5.35	-------	5.35	5.00	.93	.82	22.30	20.50 21.00	1860 2602

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*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.	Phosphoric	
				Soluble in water.	Reverted.
	ATLANTIC FERTILIZER CO., THE, BALTIMORE, MD.				
2825	Farmers' Union Fertilizer,	Dr. J. O. Micheners, Colmar,	8.67	5.22	4.54
2277 2390	†G. G. G. Golden Grain Grower,	H. H. Loose, Menges Mills, R. W. Lohr, Boswell,	9.76	7.81	3.05
2276	Matchless A. B. C. Food,	H. H. Loose, Menges Mills,	10.52	8.03	2.82
2178 2581	†Reliance Special Mixture,	C. F. Fendrick, McConnellsburg. C. F. Fendrick, Mercersburg,	8.65	2.62	6.47
	R. S. AUCKER, SHAMOKIN, PA.				
2470	Grade "B," Bone and Slaughterhouse.	W. E. Aucker, Selinsgrove,	7.06	5.98	3.03
2469	**Grade "D," Bone and Slaughterhouse.	W. E. Aucker, Selinsgrove,	6.40	4.08	4.17
2471	Potash Ammoniated Potato and Truck Phosphate.	G. R. Hendricks & Son, Selinsgrove.	6.94	6.51	2.93
	BALTIMORE FERTILIZER CO., BALTIMORE, MD.				
2307	Honest Harvest,	Landis Mellinger, Dallastown,	7.54	.51	7.02
2547 1905 2606	†Honest Success,	C. D. Gillen, Chambersburg, H. L. Orr, Spruce Creek, S. B. Hershberger, Cessna,	5.73	1.48	5.45
2548	Honest Tankage, Rock and Potash,	C. D. Gillen, Chambersburg,	3.50	.56	5.48
1843 2029	†Old Honesty,	J. N. Leightner, Gettysburg, George M. Kocher, Petersburg,	7.69	1.19	7.01
	BALTIMORE PULVERIZING CO., BALTIMORE, MD.				
1977 2657	†Farmers' Favorite Fertilizer,	S. S. Miller, Lebanon, L. Steigerwalt, Andreas,	6.34	2.87	4.29
2451 2302 2658	†High Grade Wheat Compound,	M. S. Bond, Northumberland, J. A. Shaffer, ordered from factory for own use, Glen Rock. L. Steigerwalt, Andreas,	10.91	1.31	6.39
2049	Practical Fertilizer,	A. J. Bonser, Mill Creek,	8.28	1.49	7.42
	BAUGH & SONS CO., PHILADELPHIA, PA.				
2387 2681	Baugh's Export Bone with Potash.	P. J. Blough, Hooversville, J. F. Hogsett & Co., Uniontown.	3.87	1.40	5.81
2697	Baugh's Peninsular Grain Producer,	W. C. Graifley, Dushore,	10.06	4.19	4.20
1981 1855 2528	†Baugh's Special Potato Manure,	E. H. Kern & Co., Parksburg. Biglerville Warehouse Co., Biglerville. N. F. Reed, New Cumberland,	10.55	3.99	2.56
2189 2246	†Baugh's Wheat Fertilizer (For Wheat and Grass).	Isaac Pierson, Bedford, J. U. Ruff, New Oxford,	7.12	5.76	2.62
	BAY CHEMICAL CO., BALTIMORE, MD.				
2531	Big Crop Grower,	Wireman Sheaffer, White Hill,	5.91	3.59	3.03
2259 2530	*Farmers' Choice,	John W. Shoemaker, Littlestown. Wireman & Sheaffer, White Hill.	7.85	3.43	3.84
2256	Grain Special,	John W. Shoemaker, Littlestown.	6.63	2.92	4.38

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†Composite sample.
††Guaranteed soluble phosphoric acid 6; insoluble, 2.
**Phosphoric acid not derived exclusively from pure unsteamed bone.

LIZERS—Continued.

Acid in 100 Pounds.					Potash in 100 Pounds.				Nitrogen in 100 lbs.		Computed commercial value of 2,000 pounds at Department rating.	Selling price of 2,000 pounds at point of selection.	Sample number.
Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.		Found.	Guaranteed.			
	Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.					
2.07	11.83	9.00	9.76	8.00	7.95	-------	7.95	8.00	*1.14	1.65	29.06	23.00	2825
1.16	12.02	10.00	10.86	9.00	3.91	-------	3.91	4.00	*1.23	1.65	26.33	25.00 22.65	2277 2390
1.52	12.37	9.00	10.85	8.00	2.87	-------	2.87	3.00	.45	.41	21.57	17.50	2276
2.33	11.42	9.00	9.09	8.00	1.75	-------	1.75	1.00	.74	.82	18.92	16.00 16.00	2178 2581
2.27	11.23	9.98	*8.96	9.38	3.71	-------	3.71	3.72	1.32	1.33	24.86	-------	2470
2.14	10.39	9.60	*8.25	8.99	3.07	-------	*3.07	3.39	*.85	1.20	21.08	-------	2469
1.84	11.28	-------	9.44	9.00	4.51	-------	4.51	4.00	.89	.41	23.54	18.00	2471
1.72	9.25	9.00	*7.53	8.00	2.34	-------	2.34	2.00	1.02	1.00	19.70	19.00	2307
1.67	8.60	8.00	6.98	7.00	4.61	-------	4.61	4.00	.77	.80	20.34	20.00 22.00 21.00	2547 1905 2606
2.52	8.56	8.00	6.04	7.00	1.93	-------	1.93	1.00	.53	.20	16.11	15.00	2548
1.20	9.40	9.00	8.20	8.00	2.60	-------	2.60	2.00	.57	.40	18.28	18.00 18.00	1843 2029
1.28	8.44	-------	7.16	5.50	2.67	-------	2.67	1.75	.88	.82	19.00	17.25 18.00	1977 2657
1.99	9.69	-------	*7.70	8.00	1.97	-------	1.97	2.00	1.52	1.65	22.10	20.75 19.00 23.00	2451 2302 2658
1.02	9.93	-------	8.91	8.00	2.49	-------	2.49	2.00	.43	.41	18.37	18.50	2049
5.71	12.42	11.00	6.71	-------	2.57	-------	2.57	2.00	2.09	1.65	26.42	28.00 28.00	2387 2681
2.63	11.02	-------	8.39	8.00	2.50	-------	2.50	2.00	1.28	1.00	23.01	20.00	2697
1.50	7.05	-------	5.55	5.00	10.76	-------	10.76	10.00	1.49	1.65	29.10	26.00 28.00 28.00	1981 1855 2528
.77	9.15	-------	8.38	8.00	2.14	-------	2.14	2.00	*1.37	1.65	22.20	22.00 22.00	2189 2246
.56	*7.18	9.00	*6.62	7.00	1.87	-------	*1.87	3.00	1.65	1.65	21.28	21.85	2581
1.06	*8.83	10.00	*7.27	8.00	3.79	-------	*3.79	4.00	.87	.82	20.29	20.00 19.25	2259 2530
.36	*7.66	10.00	*7.30	8.00	1.20	-------	1.20	1.00	.57	.41	15.81	16.00	2256

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*Constituent falls below guaranty.

COMPLETE FERTI

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.	Phosphoric	
				Soluble in water.	Reverted.
2258 2529	Valley Queen,	John W. Shoemaker, Littlestown. Wireman & Sheaffer, White Hill.	8.33	2.77	4.63
	BERG CO., THE, PHILADELPHIA, PA.				
2853	Berg's Pure Dissolved Bone and Potash.	S. Book Bros., Quarryville,	5.78	6.01	2.71
2347 1975 2761	†Berg's Vigor Volo Bone and Potash.	C. B. Hull, Sinking Springs, T. Frank Ream, Palmyra, B. F. Zuck, Ephrata,	6.76	4.59	3.94
	BOWKER FERTILIZER CO., BOSTON, MASS.				
1823	Bowker's Farm and Garden Phosphate.	Robert Smith, Center Hall,	11.72	7.14	1.94
2407 2043 2732	†Bowker's Potash Fertilizer,	William H. Heckert, Bakerstown. B. F. Fink, Huntingdon, N. M. Dodd, Darlington, R. D. 2.	8.60	4.38	1.98
2075 1863 2108	†Bowker's Sure Crop Phosphate,	Wm. Giles, Ulster, L. G. Landis, Swatara, J. A. Kimball, Elysburg,	13.19	6.76	2.69
	ELIAS S. BRUBAOHER, RICHLAND, PA.				
2370	Wheat and Grass Special Phosphate,	Elias Brubacher, Prescott,	6.14	1.07	5.46
	BUFFALO FERTILIZER CO., BUFFALO, N. Y.				
2081	High Grade Manure,	Wm. H. Snedeker, Snedekersville.	9.08	4.08	2.80
2399 2080 2463	†Ideal Wheat and Corn,	A. S. Dougherty, Grove City, Wm. H. Snedeker, Snedekersville. A. L. Grove, Mifflinburg,	12.84	5.01	4.14
	CAMBRIA FERTILIZER CO., JOHNSTOWN, PA.				
2412	Standard Phosphate,	Schetty Bros., Ebensburg,	4.18	3.11	3.06
	COE-MORTIMER CO., THE, NEW YORK, N. Y.				
2538 2809	E. Frank Ooe's Onandaga Special Fertilizer.	C. S. Zimmerman, Bismark, Linford Foulke, Quakertown,	6.95	5.10	2.00
2441 2115 2708	†E. Frank Coe's Penna. No. 1 Grain Special for Wheat, Rye and Oats.	Boettinger & Dietz, Danville, R. D. 4. W. F. Slagle, Bloomsburg, C. J. Easterbrook & Son, Rummerfield.	8.03	5.72	2.16
2443 2810	†E. Frank Ooe's Universal Fertilizer.	Boettinger & Dietz, Danville, R. D. 4. Linford Foulke, Quakertown,	9.32	4.81	3.06
2794	E. Frank Coe's Western New Yorker.	J. J. Garman, Manheim,	8.05	5.70	3.26
	HENRY COPE & CO., LINCOLN UNIVERSITY, PA.				
2154	Ammoniated Phosphate,	M. H. Mancill, Oxford,	9.70	2.32	6.53

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†Composite sample.

LIZERS—Continued.

Acid in 100 Pounds.					Potash in 100 Pounds.				Nitrogen in 100 lbs.		Computed commercial value of 2,000 pounds at Department rating.	Selling price of 2,000 pounds at point of selection.	Sample number.
	Total.		Available.				Total.						
Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.			
1.19	*8.50	10.00	*7.40	8.00	1.94	....	1.94	2.00	.85	.82	18.49	18.50 19.00	2258 2529
3.32	12.04	....	*8.72	9.00	3.61	....	*3.61	5.00	*1.33	2.00	25.27	30.00	2853
6.13	14.66	....	8.53	7.00	5.84	....	5.84	5.00	*1.53	2.00	29.51	33.00 30.00 32.00	2347 1975 2761
.85	9.93	9.00	9.08	8.00	2.37	....	2.37	2.00	1.73	1.65	25.20	....	1823
1.25	7.61	7.00	6.36	6.00	2.69	....	2.69	2.00	1.00	.82	19.18	21.00 22.00 20.25	2407 2043 2732
1.17	10.62	10.00	9.45	9.00	2.33	....	2.33	2.00	.92	.82	21.56	25.00 19.85 20.00	2075 1868 2108
2.42	8.95	....	*6.58	9.00	1.81	....	1.81	2.00	1.00	.82	18.61	16.56	2370
1.22	8.10	8.00	6.88	7.00	10.44	....	10.44	10.00	3.58	3.30	39.93	32.00	2081
1.58	10.73	10.00	9.15	9.00	4.91	....	4.91	5.00	1.63	1.60	27.48	29.00 26.00 22.00	2399 2080 2463
3.00	9.17	7.00	6.17	6.00	6.57	....	6.57	3.00	1.58	1.50	26.48	24.00	2412
.74	7.84	8.00	7.10	7.00	1.19	....	1.19	1.00	.99	.80	18.21	17.50 20.00	2538 2809
.83	*8.71	9.00	7.88	8.00	2.93	....	2.93	3.00	1.10	.80	21.32	20.00 20.00 17.60	2444 2115 2708
1.25	9.12	9.00	7.87	8.00	3.22	....	3.22	3.00	1.74	1.65	24.84	22.50 22.00	2443 2810
.97	9.93	9.00	8.96	8.00	3.94	....	3.94	4.00	1.03	.80	23.20	20.00	2794
.98	9.83	9.00	8.85	8.00	3.11	....	3.11	2.00	.97	1.00	21.38	21.00	2154

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*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.	Phosphoric	
				Soluble in water.	Reverted.
2153	Pure Bone Phosphate,	M. H. Mancill, Oxford,	7.48	2.49	7.49
2156	Queen of Elk Valley Phosphate,	M. H. Mancill, Oxford,	11.14	6.09	2.43
2152	Wheat Grower and Complete Manure.	M. H. Mancill, Oxford,	11.18	2.86	5.19
	JOSIAH COPE & CO., BALTIMORE, MD.				
2802	†Cope's Puro Bono Phosphate,	Jones Eaverson, Christiana,	8.77	5.50	3.77
2831		Long & Bunting, Oxford,			
2035	Cope's Try Me Fertilizer,	Clark Henderson, Petersburg,	7.48	5.71	2.50
1826		M. Grove, Bellefonte,			
2832		Long & Bunting, Oxford,			
2262	†Cope's Wheat and Grass Special,	J. N. Kelley, Littlestown,	10.28	5.48	2.18
1825		M. Grove, Bellefonte,			
2612		Emmert Snyder, New Enterprise, R. D.			
	E. DARON, DOVER, PA.				
2312	E. Daron's Harvest King Phosphate.	E. Daron, Dover,	10.89	6.18	2.49
	JAMES G. DOWNWARD CO., COATESVILLE, PA.				
2830	†All Crop Fertilizer,	Edward Miller, New London,	8.26	5.86	2.70
2194		A. G. Lehman, Swatara,			
2850		Ab. Stiveley, Quarryville,			
2009	Royal Phosphate,	John Rutherford, Wycombe,	7.90	5.74	2.25
2008	Special Wheat and Grass Fertilizer,	John Rutherford, Wycombe,	8.02	3.39	5.21
	AMOS EBY & CO., LEAMAN PLACE, PA.				
2843	Pequea Ammoniated,	Harvey S. Eby, Refton,	10.07	7.17	3.10
2844	Pequea Valley Fertilizer,	Harvey S. Eby, Refton,	8.38	4.25	3.29
	EUREKA FERTILIZER CO., PERRYVILLE, MD.				
2122	†Farmers' Favorite,	D. B. Dorrins, Thompsontown.	7.26	4.08	3.27
1875		W. E. Urick, Annville,			
2543		J. M. Frick, Dillsburg,			
2669	1-8-10 Wheat Special,	M. H. Boyer, Pine Grove, R. D. 2.	8.41	4.84	4.96
2668	Farmers' Success,	Theodore Schenck, Pine Grove,	6.99	4.79	3.18
2139	†Fish and Potash,	Josiah Emerys, Cowan,	8.17	3.43	4.04
1842		John M. Hartman, Gettysburg.			
2667	†Grain and Grass Mixture,	Theodore Schenck, Pine Grove,	7.61	3.58	3.70
1841		John M. Hartman, Gettysburg.			
2870		W. W. Hart, McCalls Ferry,			
	FARMERS' FERTILIZER AND FEED CO., WESTMINSTER, MD.				
2240	Carroll Phosphate,	Chas. C. Brown, East Berlin,	7.30	5.16	2.48
	FARMERS' FERTILIZER WORKS, ELIZABETHTOWN, PA.				
2496	Farmers' I. X. L.,	M. P. Yoder, Bellville,	7.74	6.01	2.25
	W. S. FARMER & CO., BALTIMORE, MD.				
2485	W. S. Farmer & Co's Standard Phosphate.	J. A. Eichman, Globe Mills,	12.79	8.83	2.36

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†Composite sample.

LIZERS—Continued.

Acid in 100 Pounds.					Potash in 100 Pounds.				Nitrogen in 100 lbs.		Computed commercial value of 2,000 pounds at Department rating.	Selling price of 2,000 pounds at point of selection.	Sample number.
	Total.		Available.				Total.						
Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.			
2.74	12.72	10.00	9.98	8.00	3.32	-------	3.32	3.00	1.78	1.64	27.61	27.00	2153
1.54	10.06	9.00	8.52	7.00	8.63	-------	8.63	8.00	*1.42	1.75	29.60	27.00	2156
1.29	9.34	9.00	8.05	7.00	4.20	-------	4.20	4.00	1.32	1.25	23.62	24.00	2152
4.71	13.98	13.50	9.27	9.00	4.56	-------	4.56	4.00	1.89	1.85	30.01	26.00 26.00	2802 2831
1.39	9.60	9.00	8.21	8.00	4.33	-------	4.33	4.00	1.87	1.65	26.95	23.50 22.65 23.00	2035 1826 2832
1.32	8.98	9.00	*7.66	8.00	1.26	-------	1.26	1.00	.90	.82	18.67	17.00 17.40 18.50	2262 1825 2612
.47	*9.14	10.00	8.67	8.00	4.80	.44	5.24	5.00	1.58	1.65	26.71	22.00	2312
1.12	9.18	8.00	8.06	7.00	3.30	-------	3.30	3.00	.43	.34	18.88	20.00 19.00 20.00	2830 2194 2850
1.34	9.33	8.00	7.99	7.00	2.88	-------	2.88	2.00	1.08	.82	21.67	22.00	2009
3.19	11.79	8.00	8.60	7.00	3.72	-------	3.72	3.00	1.90	1.65	27.44	29.00	2008
2.77	13.04	12.00	10.27	10.00	2.13	-------	2.13	2.00	.96	.82	22.80	20.00	2843
3.49	11.08	9.00	*7.54	8.00	10.79	-------	10.79	10.00	1.58	1.65	32.54	28.00	2844
.55	*7.90	9.00	*7.85	8.00	2.07	-------	2.07	2.00	1.77	1.65	22.70	21.50 21.50 19.00	2122 1875 2543
.29	10.08	9.00	9.79	8.00	8.72	-------	*8.72	10.00	1.52	.82	30.62	23.50	2669
.43	*8.45	9.00	7.97	8.00	6.29	-------	*6.29	7.00	1.16	.82	24.82	23.00	2668
.71	*8.18	9.00	*7.47	8.00	1.55	-------	1.55	1.00	.58	.42	16.82	17.50 16.00 18.00	2139 1842 2667
1.09	*8.37	9.00	*7.28	8.00	1.67	-------	*1.67	2.00	1.43	.82	21.34	19.00 20.00	1841 2870
.23	7.87	8.00	7.64	7.00	2.42	-------	2.42	2.00	.69	.61	18.30	17.00	2240
1.44	9.70	-------	8.26	8.00	2.50	-------	2.50	2.00	1.61	1.65	23.97	21.00	2496
.97	12.15	11.00	11.18	10.00	2.78	-------	2.78	2.50	2.24	2.16	30.83	27.00	2485

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*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.	Phosphoric	
				Soluble in water.	Reverted.
	GRIFFITH & BOYD CO., BALTIMORE, MD.				
2215	Cereal Plant Food,	Frank Himmelberger, Annville,	8.92	3.72	5.41
2280 2104 2678	†Farmers' Improved Phosphate,	G. N. Wolf's Sons, Mt. Wolf, E. A. Slagle, Paxinos, Ohio Pyle Co., Ohio Pyle,	8.25	1.78	5.52
2461	Fish, Bone and Potash,	B. N. Barbers, Mifflinburg,	7.97	3.30	4.39
1923 2025	†Griffith & Boyd Co's Stable Manure Substitute.	Weaver & Callahan, Montoursville, S. K. Chambers & Bro., Elk View.	7.66	2.46	5.51
2386 2462	†Harvest Queen Phosphate,	N. H. Blough, Davidsville, B. N. Barbers, Mifflinburg,	11.82	5.16	4.34
2159	Royal Potash Guano,	F. E. Bailey, Northbrook,	10.91	3.71	5.77
2129 2055 2282	†Special Guano,	W. G. Kline, Lewisburg, Wm. Voris, Potts Grove, G. M. Wolf Sons, Mt. Wolf,	9.05	5.43	3.59
2712	Vegetable Bone,	Geo. O. Hegner, Sewickley,	10.72	3.84	4.19
	H. F. HAGER, RICHLAND CENTER, PA.				
2813	Farmers' Favorite Phosphate,	Henry F. Hager, Quakertown,	9.11	3.04	5.78
2814	Panic Phosphate,	Henry F. Hager, Quakertown,	11.84	7.42	2.27
	FRANK HARTRANFT, COATESVILLE, PA.				
2024	Cook's Phosphate,	Frank Hartranft, Malvern,	6.13	1.78	5.42
	S. M. HESS & BRO., PHILADELPHIA, PA.				
2145 2015 2191	†Ammoniated Superphosphate,	C. R. Rhule, Mifflinburg, Leidy Allen, Doylestown, D. W. Dibert, Bedford, R. D.	13.12	6.59	2.39
2013 1959 2430	†Fish and Potash Manure,	Leidy Allen, Doylestown, S. D. Snyder, Myerstown, W. G. Hirshberger, Geistown,	12.67	5.74	3.08
1960	Jumbo Complete Formula,	S. D. Snyder, Myerstown,	9.80	3.58	3.78
2238 1874 2691	†Keystone Phosphate,	John L. Bosserman, East Berlin. Sol. Cassel, Palmyra, C. L. Brown, Nicholson,	12.17	6.17	2.74
1903 1867 1956	†The Scientific Manure,	W. A. Beck, Warriors Mark, J. G. Lefever, New Cumberland. S. D. Snyder, Myerstown,	10.38	4.08	2.13
2133	Superior Potash Mixture,	Thomas E. Spangler, Vicksburg.	13.32	6.83	1.96
2134	Tobacco Manure,	Thomas E. Spangler, Vicksburg.	10.23	8.17	1.64
1868 1866 1911	†Wheat and Grass Manure,	J. G. Lefever, New Cumberland. John Hertzler, Churchtown, Howard Stamm, Rosecrans,	10.55	5.16	3.16
	P. HOFFMAN & BRO., RAUBSVILLE, PA.				
2016	Grangers' Choice,	P. Hoffman & Bro., Kintnersville.	5.84	6.75	2.73
	HOME FERTILIZER & CHEMICAL CO., BALTIMORE, MD.				
2300	Everybody's Fertilizer,	Peter Ruhl, New Freedom,	5.68	1.32	6.81

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†Composite sample.

LIZERS—Continued.

Acid in 100 Pounds.					Potash in 100 Pounds.				Nitrogen in 100 lbs.		Computed commercial value of 2,000 pounds at Department rating.	Selling price of 2,000 pounds at point of selection.	Sample number.
	Total.		Available.				Total.						
Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.			
2.40	11.58	9.00	9.13	8.00	2.58	-------	2.58	2.00	.83	.85	21.30	21.00	2215
2.88	9.68	8.00	7.80	7.00	3.45	-------	3.45	2.00	1.00	.85	21.09	18.00 18.00 24.00	2280 2104 2678
3.76	11.45	8.00	7.69	7.00	2.77	-------	*2.77	3.00	1.39	1.50	23.52	-------	2461
1.17	9.14	6.00	7.97	5.00	4.57	-------	4.57	4.00	*2.34	2.75	28.85	30.00 27.00	1923 2025
1.91	11.41	10.00	9.50	9.00	2.97	-------	2.97	3.00	*.90	1.03	22.39	21.30 21.25	2386 2462
1.08	10.56	9.00	9.48	8.00	4.48	-------	4.48	4.00	.86	.85	22.88	22.00	2159
2.15	11.17	9.00	9.02	8.00	4.80	-------	*4.80	5.00	1.50	1.65	26.82	25.00 24.50 25.00	2129 2055 2282
1.98	10.01	9.00	8.06	8.00	6.38	-------	*6.38	7.00	*2.02	2.50	30.18	34.00	2712
1.70	10.47	10.00	8.77	8.00	3.09	-------	3.09	3.00	*1.28	1.65	23.56	24.00	2813
1.47	11.16	10.00	9.69	8.00	2.55	-------	2.55	1.00	.93	.82	22.47	21.00	2814
10.73	17.88	12.00	7.15	7.00	3.06	-------	3.06	3.00	2.49	2.47	31.75	-------	2024
1.08	10.01	9.00	8.98	8.00	2.49	-------	2.49	2.00	1.71	1.65	25.03	21.80 22.50 ------	2145 2015 2191
1.30	10.07	9.00	8.77	8.00	3.20	-------	3.20	3.00	1.70	1.65	25.54	21.50 ------ 22.50	2013 1959 2430
1.33	8.64	8.00	7.31	7.00	1.15	-------	1.15	1.00	.84	.82	17.79	-------	1960
1.38	10.29	9.00	8.91	8.00	1.41	-------	1.41	1.00	1.01	.82	20.58	19.50 18.50 22.00	2238 1874 2691
1.01	7.22	7.00	6.21	6.00	5.34	-------	5.34	5.00	1.30	1.23	23.02	24.00 23.00 ------	1908 1867 1956
.59	9.38	9.00	8.79	8.00	9.86	-------	9.86	10.00	1.71	1.65	32.17	-------	2133
.48	10.29	9.00	9.81	8.00	6.74	-------	6.74	6.00	2.44	2.47	33.68	29.50	2134
1.47	9.79	9.00	8.32	8.00	2.17	-------	2.17	2.00	.84	.82	20.00	21.00 20.25 20.00	1868 1866 1911
1.98	11.41	10.00	9.48	7.00	5.68	-------	5.68	5.00	*.64	.82	24.19	22.00	2016
2.26	10.39	10.00	*8.13	9.00	4.02	-------	4.02	2.00	.98	.82	22.29	19.50	2300

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*Constituent falls below guaranty.

COMPLETE FERTI

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.	Phosphoric	
				Soluble in water.	Reverted.
	M. P. HUBBARD & CO., BALTIMORE, MD.				
2236	Hubbard's Harvest King Phosphate for Wheat and Grass.	Levi Cassel, Dillsburg,	6.44	6.21	3.00
	HUBBARD FERTILIZER CO., THE, BALTIMORE, MD.				
1914	†Hubbard's Farmers' I. X. L.,	J. H. Long, Flemington,	9.02	1.50	5.43
2508		Elias Gerhart, Jonestown,			
2117	†Hubbard's Jewel Phosphate,	Zehner Bros., Bloomsburg,	9.89	3.70	8.76
1828		Waite Co., Bellefonte,			
2205		A. J. London, Mechanicsburg,			
1857	†Hubbard's Oriental Phosphate,	Biglerville Warehouse Co., Biglerville.	8.74	.74	6.81
1829		Waite Co., Bellefonte,			
2203		A. J. London, Mechanicsburg,			
2270	†Hubbard's Royal Ensign,	J. Emory Moul, Iron Ridge Sta.	8.01	4.40	3.64
2204		A. J. London, Mechanicsburg,			
2634		F. S. Unger, Schuylkill Haven.			
2454	†Hubbard's Standard Phosphate,	M. F. Bowman, Orangeville, R. D.	11.67	1.28	5.91
1830		W. M. Thompson, Jr., Lemont.			
2502		Elias Gerhart, Jonestown,			
	JARECKI CHEMICAL CO., SANDUSKY, O.				
2747	High Potash Mixture,	Ross Smith, Elwood City, R. D. 2.	7.90	3.13	3.85
2748	Little Giant Guano,	Ross Smith, Elwood City, R. D. 2.	9.89	2.88	4.86
2721	No. 1 Guano with Phosphate and Potash.	J. M. Rabb & Bro., Midway,	11.04	6.60	4.55
2746	Raw Bone and Guano Mixture,	Ross Smith, Elwood City, R. D. 2.	6.30	4.69	5.09
2723	Tobacco and Truck Grower,	Frank Metz, Freedom, R. D. 1,	8.72	3.10	3.14
	KEYSTONE BONE FERTILIZER CO., INC., PHILADELPHIA, PA.				
2650	†Keystone Ammoniated Superphosphate and Potash.	John Kuntz, New Tripoli,	18.07	2.18	5.96
2208		A. B. Baumgartner, Palmyra,			
2795		N. B. Moyer, Manheim,			
2111	†Keystone Excelsior Wheat Grower,	Daniel F. Knittle, Catawissa, R. D. 2.	10.56	1.02	5.97
1962		N. R. Yost, Myerstown,			
2209		A. B. Baumgartner, Palmyra,			
2020	Keystone General Manure,	W. S. Buckman, Hatboro,	8.12	1.71	5.21
2508	†Keystone Royal Corn and Potato Manure.	D. Bensing, Hamlin,	9.73	5.32	3.92
2366		Geo. W. Rauch, Myerstown,			
2796		N. B. Moyer, Manheim,			
2112	Keystone Special Penna. Grain Mixture.	Daniel F. Knittle, Catawissa, R. D. 2.	8.49	2.07	6.27
	LANCASTER BONE FERTILIZER CO., LANCASTER, PA.				
2860	Keystone Bone Standard,	Robert Scott, Fairmount,	12.14	5,00	4.01
2198	†National Crop Grower,	C. A. Urich, Swatara,	9.94	5.10	3.96
2218		Geo. S. Weidner, Bendersville Sta.			

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†Composite sample.

LIZERS—Continued.

Acid in 100 Pounds.					Potash in 100 Pounds.				Nitrogen in 100 lbs.		Computed commercial value of 2,000 pounds at Department rating.	Selling price of 2,000 pounds at point of selection.	Sample number.
	Total.		Available.				Total.						
Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.			
1.44	10.65	10.50	9.21	9.00	4.70	-------	4.70	3.00	1.08	1.00	24.75	20.00	2236
1.75	*8.68	9.75	*6.93	8.00	2.92	-------	2.92	2.00	2.02	1.65	24.65	22.00 20.50	1914 2503
.78	*8.24	9.75	*7.46	8.00	5.31	-------	5.31	5.00	1.10	1.00	23.07	21.50 24.00 20.00	2117 1828 2205
1.56	*8.61	9.75	*7.05	8.00	2.69	-------	2.69	2.00	1.13	.83	20.29	19.00 20.50 17.00	1857 1829 2208
1.25	*9.29	10.00	8.04	8.00	4.52	-------	4.52	4.00	2.47	2.49	29.61	26.00 25.00 26.00	2270 2204 2634
1.43	*8.62	10.00	*7.19	8.00	3.81	-------	3.81	3.00	1.56	1.65	23.46	23.00 22.00 21.50	2454 1870 2502
.94	7.92	7.00	6.98	6.00	9.17	-------	9.17	9.00	.85	.83	25.35	27.00	2747
1.02	8.76	8.00	7.74	7.00	2.08	-------	2.08	1.00	.90	.83	19.14	20.00	2748
.77	11.92	9.00	11.15	8.00	2.58	-------	2.58	2.00	1.01	.83	23.71	24.00	2721
5.67	*15.45	16.00	*9.78	10.00	1.45	-------	1.45	1.00	1.73	1.66	26.96	25.00	2746
1.39	7.68	7.00	6.24	6.00	6.68	-------	6.68	6.00	*1.46	1.66	25.24	26.00	2723
2.67	10.81	9.00	8.14	8.00	7.54	-------	*7.54	8.00	.82	.82	25.28	24.00 24.25 24.00	2650 2208 2795
3.21	10.20	8.00	6.99	7.00	5.04	-------	5.04	5.00	.99	.82	22.74	22.00 21.00 21.00	2111 1962 2209
3.18	10.10	9.00	*6.92	8.00	3.61	-------	3.61	3.00	1.81	1.23	25.08	25.00	2020
1.34	10.58	9.00	9.24	8.00	9.21	-------	*9.21	10.00	1.83	1.65	32.84	------ ------ 29.00	2508 2366 2796
3.26	11.60	9.00	8.34	8.00	2.06	-------	2.06	2.00	1.09	.82	21.60	20.00	2112
.93	*9.94	11.00	*9.01	10.00	1.91	-------	1.91	2.00	.95	.28	19.64	18.00	2860
1.20	10.26	9.00	9.06	8.00	1.53	-------	1.53	1.00	.57	.41	18.50	19.00 19.00	2198 2218

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*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.	Phosphoric	
				Soluble in water.	Reverted.
1948 2199	†Scientific Animal Bone Compound,	G. P. McConnell, Port Royal, E. A. Urich, Swatara,	11.53	5.19	3.35
2219	Special Guano,	Geo. S. Weidner, Bendersville Sta.	11.90	4.14	3.63
	LANCASTER CHEMICAL CO., LANCASTER, PA.				
2790 2481 2840	†No. 2 Dewey Brand,	E. B. Ruhl & Son, Manheim, F. E. Brown, Lewisburg, Isaac E. Patton, Refton,	9.38	2.52	4.51
2849	No. 6 Hard Times Fertilizer,	John B. Kuckel, Quarryville,	7.70	3.66	4.65
2372 2213 2478	†No. 11 Keystone Brand,	C. S. Zimmerman, Lebanon, C. S. Zimmerman, Annville, F. E. Brown, Lewisburg,	8.20	1.98	4.71
2839	No. 3 Pure Dissolved Animal Bone and Potash.	Isaac E. Patton, Refton,	11.31	6.28	3.61
2373 2214 2483	†No. 18 Success Brand,	C. S. Zimmerman, Lebanon, C. S. Zimmerman, Annville, F. E. Brown, Lewisburg,	9.60	2.80	4.59
2482 2344 2533	†No. 14 Wheat and Grass Fertilizer,	F. E. Brown, Lewisburg, Howard Potteiger, Sinking Springs. Thomas Gill, Enola,	10.18	3.23	4.82
	LEBANON FERTILIZER WORKS, D. LEVAN, LEBANON, PA.				
2338 2206 2374	†Levan's Royal Potash Compound,	John Loose, Hamburg, A. B. Baumgartner, Lebanon, J. L. Lentz, ordered from factory for owners use, Avon.	6.11	1.36	4.96
2328 2126 2369	†Levan's Special Corn Fertilizer,	John Loose, Mohrsville, John Stover, Thompsontown, A. B. Musser, Lebanon,	7.44	1.15	5.19
2125 1876 2320	†Levan's Wheat and Grass Fertilizer.	John Stover, Thompsontown, Adam Gerhart, Lebanon, John Loose, Mohrsville,	6.31	2.77	3.68
2207 1954 2784	†Levan's Wheat and Grass Special,	Joseph McCorkle, Lebanon, Adam Gerhart, Myerstown, Henry Stoudt, Sinking Springs.	6.71	1.42	4.70
	LISTER'S AGRICULTURAL CHEMICAL WORKS, NEWARK, N. J.				
2118 2023 2385	†Lister's Ammoniated Dissolved Superphosphate.	Zehner Bros., Bloomsburg, Wm. H. Fritz, Berwyn, John M. Groh, Lickdale,	10.79	5.42	2.36
1805 2779	†Lister's G. Brand,	D. B. Griffith, Reynoldsville, Levi K. Ziegler, Lititz,	9.41	5.66	2.79
2269	Lister's Golden Sheaf,	Oliver J. Myers, Hanover,	11.48	5.61	3.18
2201 1936 2251	†Lister's Harvest Queen Phosphate,	Clay & Minnich, Rockville, J. K. McLaughlin, Port Royal. J. N. Hirsh, New Oxford,	11.05	6.62	2.21
1939	Lister's Special 10% Fertilizer,	J. K. McLaughlin, Port Royal.	8.38	6.29	2.14
1916 1889 2141	†Lister's Special Wheat Fertilizer,	A. F. Wentz, Jersey Shore, R. D. 3. S. T. Taylor, Fishertown, C. M. Sanders, Vicksburg,	12.58	6.17	1.78
2237 2022 2649	†Lister's Standard Pure Superphosphate of Lime.	W. N. Schriver, Dillsburg, Wm. H. Fritz, Berwyn, Wm. Shellhamer, New Tripoli,	12.07	7.57	2.08

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†Composite sample.

Acid in 100 Pounds.					Potash in 100 Pounds.				Nitrogen in 100 lbs.		Computed commercial value of 2,000 pounds at Department rating.	Selling price of 2,000 pounds at point of selection.	Sample number.
	Total.		Available.				Total.						
Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.			
1.86	10.40	9.00	8.54	8.00	4.04	-------	4.04	4.00	1.19	1.25	24.01	24.00 24.00	1948 2199
1.15	8.92	8.00	7.77	7.00	4.65	-------	4.65	4 00	.97	.82	22.19	22.00	2219
1.08	*8.11	9.00	*7.08	8.00	4.58	-------	4.58	4.00	1.22	1.23	22.40	24.00 ------ 22.00	2790 2481 2840
1.28	9.59	9.00	8.31	8.00	2.12	-------	2.12	2.00	.46	.41	17.74	16.00	2849
1.61	8.30	8.00	*6.69	7.00	1.60	-------	1.60	1.00	.84	.82	17.55	17.50 17.00 ------	2372 2213 2478
.85	*10.74	11.00	9.89	10.00	8.28	-------	8.28	5.00	*1.38	1.65	30.26	27.00	2839
.96	*8.35	9.00	*7.39	8.00	4.68	-------	4.68	4.00	.81	.82	20.94	22.00 21.00 ------	2373 2214 2483
1.38	9.43	9.00	8.05	8.00	2.15	-------	2.15	2.00	.85	.82	19.47	------ 18.50 19.00	2482 2344 2533
1.62	*7.94	9.00	*6.32	8.00	5.86	-------	5.86	5.00	1.64	1.65	25.82	22.00 24.00 22.00	2338 2206 2374
2.26	*8.60	9.00	*6.34	8.00	1.80	-------	*1.80	2.00	1.02	.82	18.36	18.00 18.75 ------	2328 2126 2369
2.35	*8.80	9.00	*6.45	8.00	5.88	-------	5.88	5.00	1.04	.82	22.32	20.25 19.86 19.50	2125 1876 2329
1.98	*8.10	9.00	*6.12	8.00	2.17	-------	2.17	1.50	1.42	1.23	20.30	------ 18.00 18.60	2207 1954 2784
2.15	9.98	9.00	*7.78	8.00	1.68	-------	1.68	1.50	2.40	2.06	26.84	26.50 26.00 23.00	2118 2023 2385
1.30	9.75	9.00	8.45	8.00	4.03	-------	4.03	4.00	1.12	.82	23.21	------ 21.00	1895 2779
.99	9.78	9.00	8.79	8.00	2.21	-------	2.21	2.00	.54	.41	18.88	16.00	2269
1.97	10.80	10.00	8.83	9.00	2.28	-------	2.28	2.00	1.36	1.23	23.47	20.75 20.50 23.50	2201 1936 2251
2.36	10.79	9.00	8.43	8.00	10.88	-------	10.83	10.00	1.84	1.65	34.34	28.00	1939
1.84	9.29	9.00	7.95	8.00	3.32	-------	3.32	3.00	1.78	1.65	25.43	25.00 23.15 22.75	1916 1889 2141
.95	10.55	10.00	9.60	9.00	2.40	-------	2.40	2.00	2.47	2.47	29.19	25.00 28.00 ------	2237 2022 2649

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*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.	Phosphoric	
				Soluble in water.	Reverted.
2403	Lister's 3-6-10 for Potatoes,	Morrow & Brinton, Valencia,	7.76	4.36	2.40
2085 1938 2725	†Lister's Wheat and Rye Fertilizer,	J. R. Jones, Troy, J. K. McLaughlin, Spruce Hill. O. G. Phillips, Trombell,	10.86	5.83	2.22
	FREDERICK LUDLAM CO., THE, NEW YORK CITY, N. Y.				
2291	Ludlam's Cecrops Fertilizers, A. B. F. Brand.	Wm. Overdorf, Red Lion,	10.14	6.40	2.56
2514	Ludlam's Cecrops Fertilizer, C. & G. Brand.	E. N. Diehl, Shippensburg,	8.08	4.36	3.97
2536	Ludlam's Cecrops Fertilizer, Standard.	M. D. Ebersole, Middletown,	10.76	6.50	1.88
2513	Ludlam's Cecrops Fertilizer, Standard Potash.	E. N. Diehl, Shippensburg,	9.92	6.16	2.16
	N. MARKEL, SEITZLAND, PA.				
2283	Markel's Ammoniated Phosphate,	G. N. Wolf's Son, Mt. Wolf,	7.49	2.96	4.25
	D. B. MARTIN CO., PHILADELPHIA, PA.				
2632	Martin's Bull Head Fertilizer for Cotton and Tobacco.	Frank Dietrich, Friedensburg,	8.46	6.90	2.89
2589	Martin's Claremont Vegetable Grower.	W. W. Parker, Rohrsburg,	10.73	6.18	2.53
2216 1837 2375	†Martin's Dissolved Organic Compound.	Sam Kettering, Annville, H. Cook & Co., Dillsburg, J. K. Brubacher, ordered from factory for club, Iona,	10.33	7.01	2.24
2006 1836 2406	†Martin's Special Compound,	Harry Trego, Pineville, H. Cook & Co., Dillsburg, Mars Milling & Feed Co., Mars.	8.15	5.42	2.65
	MARTIN & WHITE & CO., BALTIMORE, MD.				
2225 2568	†Ammoniated Phosphate and Potash.	D. B. Myers, Gardners Station. Greencastle Elevator Co., Greencastle.	9.49	4.82	3.49
2566	Grain and Tomato Grower,	Greencastle Elevator Co., Greencastle.	7.53	4.30	3.10
2223	M. & W. Big Crop Grower,	D. B. Myers, Gardners Station.	8.50	4.41	4.46
2224 2301	†Fruit Special,	D. B. Myers, Gardners Station. B. F. Goodwin, New Freedom,	10.18	5.68	2.81
2222	M. & W. Golden Harvest,	D. B. Myers, Gardners Station.	8.49	4.40	3.37
	MILLER FERTILIZER CO., THE, BALTIMORE, MD.				
1917 1849 1950	†Ammoniated,	Jacob Lorsong, Oval, J. Luther Scott, Gettysburg, S. P. Leidners, Van Wert,	8.29	2.95	4.68
1929 1848 2197	†Club Brand,	J. R. Opp, Muncy, J. Luther Scott, Gettysburg, J. S. Shiffer, Swatara,	4.40	1.98	5.82
1951 1850 1974	†Farmers' Profit,	S. P. Leidners, Van Wert, J. Luther Scott, Gettysburg, Jacob Gibbel, Palmyra,	9.74	2.32	5.42

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†Composite sample.

LIZERS—Continued.

Acid in 100 Pounds.					Potash in 100 Pounds.				Nitrogen in 100 lbs.		Computed commercial value of 2,000 pounds at Department rating.	Selling price of 2,000 pounds at point of selection.	Sample number.
	Total.		Available.				Total.						
Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.			
.69	7.45	7.00	6.76	6.00	10.05	-------	10.55	10.00	2.51	2.47	33.99	32.00	2408
1.91	9.96	9.00	8.05	8.00	2.26	-------	2.26	2.00	1.81	1.65	24.67	25.00 21.00 24.00	2085 1938 2725
1.04	10.00	9.00	8.96	8.00	2.37	-------	2.37	2.00	1.85	1.65	25.54	21.00	2291
1.07	9.40	9.00	8.83	8.00	2.22	-------	2.22	2.00	.59	.41	18.57	16.50	2514
.98	9.31	9.00	8.38	8.00	6.16	-------	6.16	5.00	1.84	1.65	28.83	23.50	2536
1.06	9.38	9.00	8.32	8.00	4.31	-------	4.31	4.00	1.01	.82	22.82	21.00	2518
3.54	10.75	9.00	*7.21	8.00	2.22	-------	2.22	2.00	1.71	1.65	23.78	21.00	2283
.79	10.58	-------	9.79	8.00	3.31	-------	3.31	3.00	*2.25	2.47	29.19	28.00	2632
.83	9.54	-------	8.61	7.00	5.31	-------	5.31	5.00	*1.80	2.47	27.98	26.50	2589
1.19	10.44	-------	9.25	9.00	2.11	-------	2.11	2.00	1.10	1.08	22.11	------ 18.75 20.00	2216 1837 2375
1.21	9.28	-------	8.07	8.00	5.21	-------	5.21	5.00	1.75	1.65	27.08	24.00 23.75 24.00	2006 1836 2406
1.91	10.22	9.00	8.31	8.00	1.95	-------	1.95	2.00	.79	.82	19.69	17.00 18.00	2225 2568
1.42	8.82	8.00	7.40	7.00	4.68	-------	*4.68	5.00	.96	.82	22.05	18.50	2566
1.48	10.35	9.00	8.87	8.00	1.96	-------	1.96	2.00	*1.07	1.65	21.18	20.00	2223
.80	9.29	9.00	8.49	8.00	4.58	-------	*4.58	5.00	*1.12	1.65	23.60	23.00 24.00	2224 2801
2.05	9.82	8.00	7.77	7.00	1.52	-------	1.52	1.00	.86	.82	18.95	17.00	2222
1.23	8.96	8.50	*7.63	8.00	2.45	-------	2.45	2.00	1.57	1.65	22.59	22.00 22.25 23.00	1917 1849 1950
.87	8.67	8.50	*7.80	8.00	2.34	-------	2.34	2.00	.66	.42	18.06	15.40 16.25 18.00	1929 1848 2197
.89	8.63	8.50	*7.74	8.00	5.10	-------	5.10	5.00	1.06	.83	22.81	22.85 21.25 22.00	1951 1850 1974

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*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.	Phosphoric	
				Soluble in water.	Reverted.
2142 2837	†M. B. S.,	Gonsert & Noll, Lewisburg, Joseph C. Walker & Sons Co., Gap.	7.18	1.40	5.83
2202 2149 2298	†Standard Phosphate,	Jacob Simmons, New Kingston. Miller T. Harkins, Oxford, F. H. Shenberger, Brownton Station.	6.81	4.46	3.70
2526	W. G. Phosphate,	J. K. Beidler & Son, Oakville,	6.75	2.11	5.95
	WILLIS L. MYERS, POINT PLEASANT, PA.				
2829	Bucks County Special Fertilizer,	Willis L. Myers, Doylestown,	8.70	4.49	3.24
2828	Gilt Edge Mixture,	Willis L. Myers, Doylestown,	4.60	4.79	2.45
	NASSAU FERTILIZER CO., NEW YORK, N. Y.				
1913 1861 2138	†General Favorite,	John R. Schranck, Booneville, A. M. Brandt, Palmyra, Snyder & Sons, Mifflinburg,	11.25	6.03	2.00
1862	Nassau Practical,	A. M. Brandt, Palmyra,	11.39	7.20	1.69
2357 2181 2440	†Plow Brand,	Daniel Brickhart, White Bear, A. M. McClure, Everett, A. A. Belcher, Danville, R. D. 4.	12.08	6.46	2.30
	G. OBER & SONS CO., BALTIMORE, MD.				
2305	Ober's Farmers' Mixture,	Jonathan Geesey, Dallastown,	8.87	6.49	2.51
2579	Ober's Independent Ammoniated Superphosphate.	J. A. Witherspoon, Mercersburg.	8.04	7.52	2.28
2306 2585	†Ober's Stag Guano,	Jonathan Geesey, Dallastown, C. F. Fendricks, Mercersburg,	8.89	6.29	2.88
	PATAPSCO GUANO CO., BALTIMORE, MD.				
2713	Coon Brand Guano,	Wm. Hide, Pennysville,	11.56	8.29	1.66
1844	†Patapsco Fish Guano,	E. C. Thomas, Gettysburg,	9.46	4.13	2.34
1945 1946 2243	†Sea Gull Guano,	J. S. Harley, Thompsontown, J. S. Harley, Thompsontown, Pius Reynolds, East Berlin,	11.43	5.89	2.48
1846 2720	†Patapsco Special Wheat Compound Animal Bone Base.	E. C. Thomas, Gettysburg, R. J. Mathers, Cannonsburg, R. D. 4.	9.84	8.66	2.53
	PIEDMONT MT. AIRY GUANO CO., BALTIMORE, MD.				
2601 2273 2770	†Levering's Ammoniated Bone,	M. Gillis, Hughesville, N. N. Loose, Menges Mills, John B. Bucher, Ephrata,	8.37	5.64	3.11
2771 2274 2799	†Levering's Harvest Queen,	John B. Bucher, Ephrata, N. N. Loose, Menges Mills, Abraham Earle, E. Petersburg.	6.06	6.76	2.64
2772 2798	†Levering's Standard,	John B. Bucher, Ephrata, Abraham Earle E. Petersburg.	7.19	6.06	1.95
2046	Piedmont, Pennsylvania Grain Grower.	John G. Simpson, Huntingdon,	11.32	5.92	2.36
2499	Piedmont Plow Brand,	Robt. Close, Milroy,	6.52	4.95	2.79

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†Composite sample.

LIZERS—Continued.

Acid in 100 Pounds.					Potash in 100 Pounds.				Nitrogen in 100 lbs.		Computed commercial value of 2,000 pounds at Department rating.	Selling price of 2,000 pounds at point of selection.	Sample number.
	Total.		Available.				Total.						
Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.			
.98	8.21	7.50	7.23	7.00	3.48	....	3.48	3.00	.83	.83	19.39	19.00 20.00	2142 2837
1.11	9.27	8.50	8.16	8.00	3.15	....	3.15	3.00	2.47	2.47	28.27	26.00 29.00 24.00	2202 2149 2298
.84	8.90	7.50	8.06	7.00	1.40	....	1.40	1.00	.64	.42	18.34	17.00	2526
1.42	*9.15	10.00	*7.73	9.00	6.55	....	*6.55	7.00	1.75	1.65	28.14	29.50	2829
1.10	*8.34	10.00	*7.24	9.00	6.02	....	6.02	5.00	.96	.82	23.14	25.00	2828
1.30	9.83	9.00	8.03	8.00	4.32	....	4.32	4.00	.93	.82	22.42	21.00 19.30 15.50	1913 1861 2138
1.12	10.01	9.00	8.89	8.00	5.82	....	5.82	6.00	2.58	2.47	32.73	27.85	1862
1.22	9.98	9.00	8.76	8.00	2.18	....	2.18	2.00	1.83	1.65	25.09	24.00 25.00 22.00	2357 2181 2440
2.00	11.00	10.00	9.00	9.00	2.38	....	2.38	2.00	1.05	.82	22.27	19.50	2305
2.12	11.92	9.00	9.80	8.00	1.02	....	1.02	1.00	.93	.82	21.30	17.00	2579
1.53	10.70	9.00	9.17	8.00	4.26	....	4.26	4.00	.89	.82	23.36	20.00 20.50	2306 2585
1.01	10.96	10.00	9.95	9.00	3.32	....	3.32	3.00	.98	.82	23.60	26.00	2713
1.38	8.35	7.00	6.97	6.00	2.66	....	2.66	2.00	1.73	1.65	23.84	20.00 20.00	1844 1945
1.13	9.50	9.00	8.37	8.00	1.20	....	1.20	1.00	.97	.82	19.48	18.00 17.00	1946 2243
2.68	13.87	14.00	11.19	9.00	2.64	....	2.64	2.50	1.97	1.85	29.53	26.00 28.00	1846 2720
1.14	9.89	....	*8.75	9.00	4.73	....	4.73	3.00	.85	.82	22.96	20.00 21.00 21.00	2601 2273 2770
.74	10.14	....	9.40	8.00	2.31	....	2.31	2.00	.88	.82	21.03	19.50 19.00 19.00	2771 2274 2799
.57	8.58	....	8.01	8.00	4.48	....	4.48	3.00	*1.06	1.65	22.71	23.50 23.00	2772 2798
.57	8.85	....	8.28	7.00	5.42	....	5.42	5.00	.84	.82	22.94	21.00	2046
.98	8.67	....	*7.74	8.00	2.39	....	2.39	2.00	1.70	1.65	23.48	21.80	2499

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*Constituent falls below guaranty.

COMPLETE FERTI

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.	Phosphori	
				Soluble in water.	Reverted.
	PITTSBURG PROVISION & PACKING CO., PITTSBURG, PA.				
2711	Keystone Fertilizer,	K. E. Algeo, Mt. Lebanon,	5.57	7.36	2.52
	POLLOCK FERTILIZER CO., THE, BALTIMORE, MD., BY A. A. C. CO., NEW YORK.				
2028	†Pollock's Owl Brand Guano,	J. H. Scott, Alexandria, R. D.	8.25	4.18	3.21
1896		S. K. Moses, Osterburg,			
2261		J. N. Kelley, Littlestown,			
2186	†Pollock's Special Wheat Grower,	Francis Baker, Everett,	11.54	6.07	2.18
1934		W. B. McCohan, Mifflin,			
2192		W. Nevin Diehl, Bedford, R. D. 1.			
	PUGH & LYONS, OXFORD, PA.				
2146	Bone Phosphate,	S. R. Dickey & Co., Oxford,	6.88	2.22	8.61
	RAMSBURG FERTILIZER CO., THE, FREDERICK, MD.				
2264	†Excelsior Plant Food,	Nelson Study, Littlestown,	10.00	1.40	8.61
2564		L. H. Liter & Bros., Greencastle.			
	RASIN'S MONUMENTAL CO., BALTIMORE, MD.				
1978	†Rasin's Best Wheat and Grass Producer.	E. H. Kern & Co., Parkesburg.	11.09	5.41	2.69
1935		W. W. Book, Port Royal,			
2677		Peter Brough, Bakersville,			
1987	Rasin's Genesee Valley Root Manure,	S. C. Walker & Co., Chadds Ford.	9.27	6.25	1.82
2646	Rasin's Special Fish and Potash Mixture.	Edwin D. Liebold, Seagersville,	5.56	3.58	3.01
	READING BONE FERTILIZER CO., READING, PA.				
2086	Reading All Crop Special,	H. W. Ely, Troy,	7.17	3.25	4.99
2220	†Reading Harvest Queen,	D. B. Myers, Gardners Sta.,	8.15	1.49	5.30
1976		A. M. Brandt, Palmyra,			
2598		J. P. Hill, Muncy, R. D. 1,			
2343	Reading Special Grain and Grass Producer.	A. F. Baver, Hamburg,	7.09	2.70	5.61
2084	†Farmers' Tankage and Potash,	D. Ross Gregory, Petersburg,	6.98	3.38	5.00
2545		H. Cook & Co., Dillsburg,			
	ROBERT A. REICHARD, ALLENTOWN, PA.				
2662	Peerless Phosphate,	N. D. Hunsicker, Snyders,	5.69	6.09	1.48
2663	Surpass Phosphate,	N. D. Hunsicker, Snyders,	7.34	4.68	3.15
	SCHAAL SHELDON FERTILIZER CO., NEW YORK.				
2397	Empire,	P. A. Drain, Sarver,	7.79	5.24	3.22
2744	Farmers' Favorite,	J. E. Stoner, New Castle, R. D. 4.	9.17	5.67	2.80
2396	Schaal's Corn and Potato,	P. A. Drain, Sarver,	8.79	5.86	2.61
	SCOTT FERTILIZER CO., THE, ELKTON, MD.				
2011	Scott's Standard Phosphate,	Harvey M. Myers, Doylestown,	7.17	4.85	3.81

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†Composite sample.

LIZERS—Continued.

Acid in 100 Pounds.					Potash in 100 Pounds.				Nitrogen in 100 lbs.		Computed commercial value of 2,000 pounds at Department rating.	Selling price of 2,000 pounds at point of selection.	Sample number.
	Total.		Available				Total.						
Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.			
2.23	12.11	11.00	9.88	9.00	1.95	-------	1.95	1.50	1.24	1.43	23.82	22.00	2711
.82	8.21	8.00	7.39	7.00	1.69	-------	1.69	1.50	.50	.41	16.53	------ 18.50 16.00	2028 1896 2261
1.21	9.46	9.00	8.25	8.00	2.18	-------	2.18	2.00	.94	.82	20.43	22.00 19.00 ------	2186 1934 2192
3.02	*8.85	11.00	5.83	6.00	6.07	-------	6.07	5.00	1.52	1.65	28.10	26.50	2146
3.00	13.01	-------	10.01	9.00	2.25	-------	2.25	2.00	*1.43	1.65	24.86	21.50 22.00	2264 2564
1.56	9.66	9.00	8.10	8.00	3.08	-------	3.08	3.00	1.37	1.23	23.16	21.00 21.00 20.80	1978 1935 2677
1.24	9.31	9.00	8.07	8.00	4.40	5.47	9.87	10.00	.85	.82	28.59	28.00	1987
1.02	7.61	7.00	6.59	6.00	10.00	2.22	12.22	10.00	3.22	3.29	39.85	30.00	2646
1.78	9.97	8.00	8.24	7.00	5.36	-------	5.36	5.00	*1.25	1.65	26.19	28.00	2086
1.64	8.43	7.00	6.79	6.00	2.20	-------	2.20	2.00	.96	1.02	18.70	20.00 18.50 17.00	2220 1976 2598
1.33	9.69	8.00	8.31	7.00	2.45	-------	*2.45	3.00	.96	.82	20.42	18.50	2343
1.37	9.75	9.00	8.38	8.00	3.98	-------	3.98	4.00	.92	.82	21.87	19.00 18.75	2034 2545
2.46	9.98	10.00	*7.52	8.00	4.10	-------	4.10	4.00	.97	.82	22.30	21.00	2662
3.19	11.02	10.00	7.83	8.00	1.42	-------	*1.42	2.00	1.86	1.64	24.34	-------	2663
2.02	10.48	8.00	8.46	7.00	1.59	-------	1.59	1.00	.98	.82	20.35	22.00	2397
2.19	10.66	9.00	8.47	8.00	2.10	-------	2.10	2.00	1.17	.82	21.92	20.00	2744
2.18	10.65	9.00	8.47	8.00	4.00	.17	4.17	4.00	1.87	1.65	27.42	26.00	2396
2.73	10.39	-------	*7.66	8.00	4.50	-------	4.50	4.00	1.14	.82	23.47	21.00	2011

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*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.	Phosphoric	
				Soluble in water.	Reverted.
1966	†Scott's Sure Crop Grower,	Elias S. Brubacher, Richland,	8.48	5.48	4.04
2000		John B. Satterthwaite, Woodbourne			
2001	†Wheat and Grass Grower,	John B. Satterthwaite, Woodbourne.	9.64	4.18	4.60
1967		Elias S. Brubacher, Richland,			
2645		Calvin Peters, Coplay,			
	M. L. SHOEMAKER & CO., PHILADELPHIA, PA.				
1984	†Echo Superphosphate,	Hilles & Taggert, Norristown.	8.09	6.26	3.52
2653		L. Steigerwalt, Andreas,			
2504	Good Enough Superphosphate,	Aaron Bicksler, ordered from factory for club use, Jonestown.	9.45	7.65	3.68
2359	†Shoemaker's New Jersey Special for Wheat and Clover.	L. A. Geiger, Joanna,	8.68	6.12	2.96
2211		J. B. Shaffer, Palmyra,			
2507		Aaron Bicksler, ordered direct from factory, Fredericksburg.			
2665	†Shoemaker's Special No. 2 Wheat Fertilizer.	Amandus Shaffer, New Ringgold.	8.54	8.88	3.50
2212		J. B. Shaffer, Palmyra,			
2827		C. R. Rosenberger, Colmar,			
2384	†Swift Sure Superphosphate for general use.	J. B. Shaffer, Grantville,	9.85	5.99	3.68
1985		Hilles & Taggert, Norristown.			
2505		Aaron Bicksler, ordered direct from factory, Jonestown.			
2210	†Shoemaker's Swift Sure Guano for Fall Trade.	J. B. Shaffer, Palmyra,	9.62	4.84	3.98
2005		Harry Trego, Pineville,			
2360		L. A. Geiger, Joanna,			
	CHAS. A. SICKLER & BRO., WILKES-BARRE, PA.				
2434	†Empire Phosphate,	Chas. A. Sickler & Bro., Espy.	8.50	1.81	4.34
2689		Riley Sickler, Falls,			
2690	Special Manure for Potatoes and Vegetables.	Riley Sickler, Falls,	8.94	1.21	4.24
	F. A. SIMONS, MAUD, PA.				
1994	The Farmers' Favorite High Grade Phosphate for general use.	Frank A. Simons, Cornwells,	5.87	4.01	2.78
	SMITH AGRICULTURAL CHEMICAL CO., THE, COLUMBUS, OHIO.				
2740	Ohio Farmers' Corn, Oats and Wheat Fertilizer.	J. A. Book, Newcastle, R. D. 4.	5.15	1.05	7.06
	H. H. SMYSTER, YORK, PA.				
2311	Ammoniated Chicago Bone and Tankage.	George H. Teinebaugh, West York.	10.89	4.67	4.11
	SOUTHERN FERTILIZING CO., THE, YORK, PA.				
2488	Ammoniated Dissolved Fertilizer,	J. Irvin Goss, Pointersville,	11.10	9.08	2.39
1838	†General Crop Grower,	Wm. Howe, York Springs,	11.91	5.56	3.05
2448		H. E. Fisher, Riverside,			
2436	†Royal Wheat and Grass Grower,	Elmer Shaffer, Lime Ridge,	7.96	6.50	2.33
1839		Wm. Howe, York Springs,			
2055		T. E. Sittler (Est.), Andreas,			

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omposite sample.

LIZERS—Continued.

Acid in 100 Pounds.					Potash in 100 Pounds.				Nitrogen in 100 lbs.		Computed commercial value of 2,000 pounds at Department rating.	Selling price of 2,000 pounds at point of selection.	Sample number.
	Total.		Available.				Total.						
Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.			
1.86	11.38	-------	9.52	8.00	5.61	-------	5.61	5.00	2.03	1.65	30.67	23.84 25.00	1966 2000
2.04	10.82	-------	8.78	8.00	2.12	-------	2.12	2.00	.69	.41	19.80	20.00 16.56 18.00	2001 1967 2645
1.40	11.18	10.00	9.78	7.00	2.19	-------	2.19	1.50	1.46	1.23	24.44	25.00 23.00	1984 2653
.96	12.29	10.00	11.33	8.00	2.78	-------	2.78	2.00	1.90	1.64	28.65	24.00	2504
1.49	10.57	10.00	9.08	8.00	1.26	-------	*1.26	2.00	1.50	1.08	28.01	21.00 23.00 ------	2359 2211 2507
.39	13.27	12.00	12.38	10.00	.99	-------	.99	1.00	.61	.41	22.88	19.00 21.00 24.00	2665 2212 2827
1.80	*11.47	12.00	9.67	9.00	5.20	-------	5.20	4.50	*2.49	2.88	33.08	33.00 32.00 32.00	2384 1985 2505
1.53	*10.35	11.00	8.82	8.00	5.55	-------	5.55	5.00	1.70	1.65	28.03	27.00 24.00 24.00	2210 2005 2360
2.71	8.87	-------	*6.06	8.00	2.91	-------	2.91	2.00	*1.09	1.65	20.06	22.00 20.00	2434 2689
2.64	*8.09	9.00	*5.45	7.00	3.35	-------	*3.35	7.00	*1.69	2.47	22.63	35.00	2690
1.38	*8.17	9.50	*6.79	7.00	4.03	-------	4.03	3.06	2.09	2.04	26.26	23.00	1994
1.72	9.83	9.00	8.11	8.00	2.07	-------	2.07	2.00	1.13	1.23	20.72	22.00	2740
1.11	9.89	10.00	8.78	8.00	2.28	-------	2.28	2.00	1.02	.82	21.09	18.00	2311
.85	12.82	11.00	11.47	10.00	2.71	-------	2.71	2.50	1.85	1.65	28.53	25.00	2488
.98	9.59	9.00	8.61	8.00	2.38	-------	2.38	2.00	.59	.41	19.13	16.65 19.65	1838 2448
.93	9.75	9.00	8.82	8.00	1.31	-------	1.31	1.00	.55	.41	17.06	20.00 16.00 21.00	2436 1839 2655

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*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.	Phosphoric	
				Soluble in water.	Reverted.
2435 2309 2654	†Southern Fertilizing Co's Farmers' Choice.	Wm. J. Hidley, Lime Ridge, Edward Bupp & Co., York, T. E. Sittler (Est.), Andreas,	11.44	7.08	2.45
	D. A. THOMAS & CO., HAGERSTOWN, MD.				
2569	Farmers' Mixture,	Daniel W. Hicks, Mason Dixon,	8.36	6.08	2.41
2520	Farmers' Wheat and Grass Mixture,	Nickels & Stewart, Shippensburg.	5.44	7.52	2.13
2578	Golden Sheaf,	J. A. Witherspoon, Mercersburg.	12.43	6.46	2.27
2570	Thomas' Bone Mixture,	Daniel W. Hicks, Mason Dixon,	6.48	5.61	2.77
	I. P. THOMAS & SONS CO., PHILADELPHIA, PA.				
2135 2038 2437	†Champion Phosphate,	Chas. Mensch, Mifflinburg, Wm. Miller, Saulsburg, F. P. Davis, Lime Ridge,	9.58	1.67	5.12
1942 1878 1997	†Farmers' Choice Phosphate,	W. V. Shirk, Oakland Mills, E. S. Risser, Lawn, John B. Satterthwaite, Woodbourne.	7.79	6.21	2.93
2136 1834 2377	†Improved Superphosphate,	Chas. Mensch, Mifflinburg, A. J. Harbold, Dillsburg, Ed. Shuey, Walmer's Church,	10.20	4.46	4.04
2227	Thomas' Scientific Tobacco Grower,	John W. King, York Springs,	8.81	6.15	2.57
2576	Thomas' Wheat and Corn Fertilizer,	West & West, Waynesboro,	7.61	4.69	4.67
1941 1877 1999	†Tip Top Superphosphate,	W. V. Shirk, Oakland Mills, E. S. Risser, Lawn, John B. Satterthwaite, Woodbourne.	10.08	6.62	2.82
2137 1947 2195	†Victor Potash Manure,	Chas. Mensch, Mifflinburg, W. V. Shirk, Oakland Mills, Joseph McCord, Swatara,	9.70	3.97	3.79
	JAMES THOMAS, WILLIAMSPORT, PA.				
2083	Thomas' Klondyke Brand Phosphate.	H. N. Spaulding & Son, Troy,	13.18	4.35	3.91
	TRENTON BONE FERTILIZER CO., TRENTON, N. J.				
1996	Grain Manure,	T. A. Howells, Morrisville,	7.07	6.31	1.53
	F. W. TUNNELL & CO., PHILADELPHIA, PA.				
1991	Complete Superphosphate,	John C. Rhodes & Co., Chester Heights.	9.08	2.24	5.84
2217	Re-sieved Phosphate,	N. R. Yost, Myerstown,	7.72	.85	5.50
1964	Royal Wheat Grower,	N. R. Yost, Myerstown,	11.07	1.02	6.52
1990 1963 2098	†F. W. Tunnell & Co's Ammoniated Phosphate and Potash.	John C. Rhodes & Co., Chester Heights. N. R. Yost, Myerstown, Harry Leiby, Snydertown,	7.13	1.50	5.81
1998 1965 2099	†F. W. Tunnell & Co's Potato Grain Grower.	John C. Rhodes & Co., Chester Heights N. R. Yost, Myerstown, Harry Leiby, Snydertown,	9.72	.84	5.70
	TUSCARORA FERTILIZER CO., BALTIMORE, MD.				
2552	Special Crop Grower,	Geo. Walker, Chambersburg,	8.84	4.93	2.14

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†Composite sample.

LIZERS—Continued.

Acid in 100 Pounds.					Potash in 100 Pounds.				Nitrogen in 100 lbs.		Computed commercial value of 2,000 pounds at Department	Sample number. rating.	Selling price of 2,000 pounds at point of selection.
	Total.		Available.				Total.						
Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.			
1.31	10.84	10.00	9.53	9.00	2.48	-------	2.48	2.00	.97	.82	22.16	18.00 20.00 22.00	2435 2309 2654
.45	8.94	9.00	8.59	8.00	2.46	-------	2.46	2.00	.86	.82	20.08	18.50	2569
.68	10.33	9.00	9.65	8.00	2.43	-------	2.43	2.00	.81	.82	21.24	18.00	2520
.45	9.18	9.00	8.73	8.00	1.38	-------	1.38	1.00	*.71	.82	18.58	16.00	2578
.77	9.15	9.00	8.38	8.00	2.06	-------	2.06	2.00	1.68	1.65	23.74	21.00	2570
2.33	9.12	9.00	*6.79	8.00	4.07	-------	4.07	4.00	1.75	1.60	24.74	21.50 ------ 20.50	2135 2088 2437
1.15	*10.28	10.50	*9.13	9.50	2.16	-------	2.16	2.00	1.47	*1.60	23.59	24.00 23.00 25.00	1942 1878 1997
1.56	10.06	10.00	*8.50	9.00	2.19	-------	2.19	2.00	.74	.80	19.69	17.50 20.00 19.50	2136 1834 2377
1.03	9.75	9.00	8.72	8.00	4.74	-------	*4.74	6.00	2.51	2.50	30.85	31.00	2227
1.37	10.73	10.00	9.36	9.00	2.80	-------	*2.80	3.00	.88	.80	21.81	23.00	2576
1.21	10.65	9.00	8.44	8.00	4.35	-------	4.35	4.00	*2.16	2.50	29.60	27.00 26.50 29.00	1941 1877 1999
1.50	9.26	9.00	*7.76	8.00	4.57	-------	*4.57	5.00	.91	.80	22.00	19.50 20.50 22.00	2137 1947 2195
1.19	*9.45	11.00	*8.26	9.00	2.37	-------	*2.37	3.00	1.50	.82	23.50	24.00	2083
1.85	9.69	-------	7.84	8.00	3.32	-------	3.32	3.00	1.89	1.65	26.07	26.00	1996
2.80	10.88	9.00	8.08	8.00	2.15	-------	2.15	2.00	1.05	.82	21.03	22.00	1991
1.59	7.94	7.00	6.45	6.00	1.04	-------	1.04	1.00	.58	.41	15.32	18.00	2217
3.82	11.86	10.00	*7.54	9.00	1.81	-------	1.81	1.00	*.55	.82	18.08	21.00	1964
1.50	8.81	8.00	7.31	7.00	1.97	-------	1.97	2.00	.50	.21	16.70	19.00 18.00 18.00	1990 1963 2098
3.34	9.88	8.00	*6.54	7.00	4.22	-------	4.42	4.00	1.75	1.65	25.09	26.00 23.00 28.00	1998 1965 2099
1.02	9.08	8.50	8.06	8.00	2.27	-------	2.27	2.00	.89	.82	19.87	19.00	2552

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*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.	Phosphoric	
				Soluble in water.	Reverted.
	J. E. TYGERT & CO., PHILADELPHIA, PA.				
2467 1957 2626	†Prolific Phosphate,	W. A. Keeler, Kreamer, Adam Brown, Myerstown, Robt. Schaeffer, Rock,	10.10	3.48	4.14
2882	Tygert's Old Reliable Phosphate,	F. J. Hamilton, Grampian,	11.88	7.78	2.17
1995	Victor Crop Grower,	A. C. Wildman, Cornwells,	13.12	6.57	2.24
	UNION CHEMICAL WORKS, INC., NORTH WALES, PA.				
2377 2816	†Farmers' Special,	Harry Horst, ordered from factory for own use, Prescott. Henry K. Mohr, Quakertown,	9.75	5.19	2.97
2818	General Crop Grower,	Henry K. Mohr, Quakertown,	8.93	4.97	3.67
2775 2815	†Grain & Grass Grower,	John B. Johns, Stevens, Henry K. Mohr, Quakertown,	10.59	5.75	2.55
	VIRGINIA CAROLINA CHEMICAL CO., RICHMOND, VA.				
1920 1901 2252	†V. C. C. Co's Fish Bone and Potash.	W. J. Burrell, Salona, R. D. 1. H. S. Orr, Warriors Mark, J. C. Bireley, New Oxford,	10.36	5.57	3.33
2475 2757	†V. C. C. Co's Special for Wheat and Grass.	Isaac Kunkle, Winfield, L. A. Geiger, Joanna,	8.85	4.37	2.76
	F. K. WALT CO., READING, PA.				
2345 2341 2633	†Walt's Grain and Grass Grower,	F. K. Walt, Sinking Springs, F. K. Walt, Hamburg, A. D. Super, Schuylkill Haven,	11.25	4.79	4.50
	W. E. WHANN & CO., WILLIAM PENN, PA.				
2295	Whann's Chester Valley Available Ammoniated Superphosphate.	A. L. Miller, Red Lion,	11.39	5.36	2.59
2294 2820	†Whann's Chester Valley Fish and Potash Fertilizer.	A. L. Miller, Red Lion, Milton Johnson, Quakertown,	12.41	6.11	2.43
2821	Whann's Chester Valley Special Ammoniated Superphosphate.	Milton Johnson, Quakertown,	10.48	5.86	2.74
	WOOLDRIDGE FERTILIZER CO., THE, BALTIMORE, MD.				
2766	Cyclone,	E. O. Hacker, Ephrata,	6.99	4.24	3.92
2592	High Grade Potato and Tomato Grower.	J. L. Reece & Co., Millville,	5.69	4.14	4.76
2594 1865 2768	†Old Hickory Phosphate,	J. L. Reece & Co., Millville, S. B. Jackson, Carlyle, E. O. Hacker, Ephrata,	7.30	3.28	4.99
2593 1864 2765	†Wooldridge Clover Leaf Crop Grower.	J. L. Reece & Co., Millville, S. B. Jackson, Carlyle, E. O. Hacker, Ephrata,	5.12	2.33	5.49
	ROBERT A. WOOLDRIDGE CO., THE, BALTIMORE, MD.				
2754	Wooldridge Champion Grain Phosphate.	Harvey Craemer, Joanna,	11.96	5.51	4.30
2304 1833 2379	†Wooldridge Chieftain Phosphate,	C. A. Rost, Red Lion, W. W. Tate, Bellefonte, Wm. Klein, Palmyra,	12.21	6.50	2.18

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†Composite sample.

LIZERS—Continued.

Acid in 100 Pounds.					Potash in 100 Pounds.				Nitrogen in 100 lbs.		Computed commercial value of 2,000 pounds at Department rating.	Selling price of 2,000 pounds at point of selection.	Sample number.
	Total.		Available.				Total.						
Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.			
.98	8.60	8.00	7.62	7.00	1.23	-------	1.23	1.00	.60	.41	16.77	16.00 ------- 18.00	2467 1957 2626
1.13	11.08	10.00	9.95	9.00	2.79	-------	2.79	2.50	1.70	1.85	26.46	26.00	2882
1.08	9.89	9.00	8.81	8.00	3.82	-------	3.82	4.00	.91	.82	22.36	25.00	1905
.83	8.99	-------	8.16	8.00	4.48	-------	4.48	4.00	1.21	.82	23.61	23.00 21.00	2371 2816
.56	9.20	-------	8.64	8.00	2.45	-------	2.45	2.00	.96	.82	20.58	20.00	2818
.82	9.12	-------	8.30	8.00	5.74	-------	*5.74	6.00	1.69	1.65	27.44	25.00 25.00	2775 2815
1.20	10.10	9.00	8.90	8.00	3.06	.04	3.10	3.00	1.66	1.65	25.28	20.35 20.00 20.00	1920 1901 2252
2.49	9.62	8.00	7.13	7.00	1.97	-------	1.97	2.00	.68	.41	18.30	16.00 15.00	2475 2757
5.82	15.11	10.00	9.29	8.00	3.33	-------	*3.33	4.00	*.71	.81	23.47	19.00 19.00 20.00	2345 2341 2633
.97	8.92	8.00	7.95	7.00	3.21	-------	3.21	3.00	1.21	1.00	22.16	20.75	2295
1.15	9.69	9.00	8.54	8.00	4.90	-------	4.90	5.00	1.55	1.48	26.34	25.00 27.00	2294 2820
1.43	10.08	8.50	8.60	7.50	2.07	-------	2.07	2.00	.94	.82	20.68	20.50	2821
1.12	9.28	8.50	8.16	8.00	3.56	-------	3.56	3.00	2.52	2.47	28.89	26.00	2766
.89	9.79	9.50	8.90	9.00	6.96	-------	6.96	5.00	1.70	1.65	29.42	25.00	2592
.88	9.15	8.50	8.27	8.00	2.29	-------	2.29	2.00	1.11	1.03	20.79	20.00 22.00 20.00	2594 1865 2768
.98	8.80	8.50	7.82	8.00	2.29	-------	2.29	2.00	.61	.42	17.86	17.00 18.00 17.00	2593 1864 2765
1.28	11.09	10.00	9.81	9.00	2.02	-------	2.02	2.00	.89	.82	21.45	-------	2754
1.24	9.92	9.00	8.68	8.00	2.33	-------	2.33	2.00	1.71	1.65	24.67	22.00 20.00 24.50	2304 1833 2379

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*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.	Phosphoric	
				Soluble in water.	Reverted.
1879	†Wooldridge Farmer's Favorite Cereal Compound.	Wm. Kreiser, Lickdale,	6.74	4.68	2.50
1817		W. W. Tate, Bellefonte,			
2068		Harry V. Smith, Exchange,			
2755	Wooldridge Triumph Brand Phosphate.	Harvey Craemer, Joanna,	11.05	7.24	2.81
	YORK CHEMICAL WORKS, YORK, PA.				
2231	Ammoniated R. B.,	C. E. Cook, Dillsburg,	11.39	7.81	3.76
1932	†Dempwolf's Half and Half,	W. H. Stallenback, Mifflintown.	10.44	3.70	3.48
1909		The J. N. Gentz Co., Mill Hall, R. D. 1.			
2388		W. H. Rapp, Hanoverdale,			
2167	†Dempwolf's Harvest Queen,	Isaac Rosen, St. Peters,	9.09	3.49	3.65
1930		W. H. Stallenback, Mifflintown.			
2230		A. G. Smith, Dillsburg,			
1931	†Dempwolf's Plow Brand,	W. H. Stallenback, Mifflintown.	8.15	3.60	3.74
2166		Isaac Rosen, St. Peters,			
2036	Prosperity,	J. H. Edmiston, Petersburg, R. D.	7.87	3.85	3.75
1971	†Standard,	A. L. Risser, Palmyra,	9.98	6.22	2.79
1940		W. H. Stallenback, Mifflintown.			
2168		Isaac Rosen, St. Peters,			
1972	Standard Potash,	A. L. Risser, Palmyra,	8.41	2.80	3.61
	HENRY S. ZOOK, ELVERSON, PA.				
2164	No. 5. Pride of Chester Corn, Oats and Wheat Phosphate.	Henry S. Zook, Elverson,	12.43	9.03	2.06
2163	No. 6. Pride of Chester Phosphate for general use.	Henry S. Zook, Elverson,	13.88	7.22	2.30
2162	†No. 7. Pride of Chester Wheat, Corn and Potato Phosphate.	Henry S. Zook, Elverson,	12.64	6.32	2.43
2871		Henry S. Zook, Geigertown,			

†Composite sample.

LIZERS—Continued.

Acid in 100 Pounds.					Potash in 100 Pounds.				Nitrogen in 100 lbs.		Computed commercial value of 2,000 pounds at Department rating.	Selling price of 2,000 pounds at point of selection.	Sample number.
	Total.		Available.				Total.						
Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.			
.79	7.97	8.00	7.18	7.00	2.60	-------	2.60	2.00	.49	.41	17.29	18.50 15.50 15.50	1879 1817 2063
1.21	11.26	9.00	10.05	8.00	3.36	-------	*3.36	4.00	2.20	1.23	29.47	-------	2755
1.91	13.48	11.00	11.57	10.00	4.45	-------	4.45	4.00	*1.41	1.65	28.64	25.50	2231
1.34	8.52	7.50	7.18	7.00	2.22	-------	2.22	1.00	*.71	.82	17.98	16.00 19.75 19.50	1932 1909 2383
1.58	8.72	8.50	*7.14	8.00	2.18	-------	2.18	2.00	.85	.82	18.70	19.00 17.25 18.50	2167 1930 2230
1.53	8.87	9.00	*7.34	8.00	1.92	-------	1.92	2.00	*1.26	1.65	21.55	20.05 21.50	1981 2166
1.21	*8.81	9.50	*7.60	9.00	2.83	-------	2.83	3.00	.82	.82	18.98	20.25	2086
.88	9.89	9.00	9.01	8.00	4.79	-------	*4.79	5.00	1.57	1.65	26.55	23.50 22.50 24.00	1971 1940 2168
1.47	*7.88	8.50	*6.41	8.00	3.93	-------	3.93	4.00	.75	.82	19.27	20.50	1972
.45	11.54	11.00	11.09	10.00	2.23	-------	2.23	2.00	.65	.41	21.78	18.00	2164
.89	10.41	9.00	9.52	8.00	3.08	-------	3.08	3.00	1.30	1.23	24.16	22.80	2163
.89	9.64	9.00	8.75	8.00	5.53	-------	*5.53	6.00	1.47	1.65	26.65	26.50 26.00	2162 2871

*Constituent falls below guaranty.

ROCK AND POTASH

Furnishing Phosphoric

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.	Phosphoric	
				Soluble in water.	Reverted.
	AMERICAN AGRICULTURAL CHEMICAL CO., NEW YORK, N. Y.				
2694	Big Crop Phosphate,	J. L. Ward, Towanda,	8.33	5.98	2.18
1952 1915 2234	†Boss Potash Fertilizer,	B. F. Gummo, Thompsontown. J. N. Getz Co., The, Lock Haven. James Jacob, Dillsburg,	8.46	5.94	2.49
2688	Fruit Tree Invigorator,	H. S. Corselius, Ransom,	9.66	7.73	2.82
2053 1886 2184	†Gem Alkaline Phosphate,	B. Savage, Turbotville, U. R. Wolf, Fishertown, H. F. Gump & Son, Everett,	7.14	3.99	2.69
1953 1882 2105	†Penn Alkaline Phosphate,	B. F. Gummo, Thompsontown. J. W. Imler, Imler, M. G. Adams, Paxinos,	8.86	4.18	2.82
2051	Superior Potash Mixture,	F. P. Spring, Muncy,	10.05	11.15	2.12
2558	Canton Chemical Soluble Alkaline Phosphate.	Marion Warehouse Company, Marion.	10.83	9.47	3.35
1928 1902 2183	†Canton Chemical Soluble Phosphate and Potash.	F. P. Spring, Muncy, H. L. Orr, Warriors Mark, H. F. Gump & Son, Everett,	10.09	7.65	2.72
2320	Great Eastern Soluble Acid Phosphate and Potash.	Jas. F. Naftzinger, Hamburg,	11.77	6.08	4.26
2700	Michigan Carbon Works Red Line Phosphate.	G. F. Hugo, Eldredsville,	8.38	10.55	3.33
2018 1872 2490	†Moro-Philips' Wheat Special,	L. M. Althouse, Kintnersville, S. K. & Levi Donkle, Myerstown. Ewing Kinslow, Newton Hamilton.	10.06	6.90	3.16
2047	Packers' Union Wheat, Oats and Clover Fertilizer.	C. S. Brown, Mill Creek,	11.96	10.41	2.52
1919 2418	†Quinnipiac Dissolved Phosphate and Potash.	A. C. Williams, Mill Hall, J. L. Culp, Indiana,	10.32	8.26	2.71
2071	Reese's Crown Phosphate and Potash.	J. K. Hetrick, Sunbury,	11.31	9.07	2.34
1969 2324	†Reese's Grass and Grain,	Geo. W. Weber, Richland, James C. Berger, Mohrsville,	9.96	5.62	4.52
2325 2072 2363	†Reese's High Grade Potash Mixture.	James C. Berger, Mohrsville, J. K. Hetrick, Sunbury, A. G. Houtz, Myerstown,	11.00	10.02	2.40
2067	Sharpless & Carpenter's Soluble Phosphate and Potash.	James H. Gibbons, Northumberland.	9.55	8.41	2.58
2110 1884 2235	†Susquehanna Alkaline Phosphate,	Wm. E. Hower, Catawissa, R. D. 2. E. L. Geist, Fishertown, James Jacobs, Dillsburg,	10.20	7.60	2.63
2704	Tygert Allen Star Soluble Phosphate and Potash.	H. A. Crammer & Son, Monroeton.	5.81	8.35	2.32
2542 2037 2679	†Zell's Dissolved Phosphate and Potash.	O. F. Arnold, Dillsburg, James Blair, Neffs Mills, Ohio Pyle Co., Ohio Pyle,	9.97	7.71	3.67
	ATLANTIC FERTILIZER CO., THE, BALTIMORE, MD.				
2278	Jumbo Crop Grower,	N. N. Loose, Menges Mills,	7.60	.77	8.26

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†Composite sample.

FERTILIZERS.

Acid and Potash.

Acid in 100 Pounds.					Potash in 100 Pounds.				Computed commercial value of 2,000 pounds at Department rating.	Selling price of 2,000 pounds at point of selection.	Sample number.
	Total.		Available.				Total.				
Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.			
.96	9.12	9.00	8.16	8.00	5.56	....	5.56	5.00	16.39	17.00	2694
.43	8.86	9.00	8.43	8.00	5.44	....	5.44	5.00	16.24	--------- 16.50 17.00	1952 1915 2234
.77	11.32	11.00	10.55	10.00	8.25	....	8.25	8.00	20.84	22.00	2688
.50	7.18	7.00	6.68	6.00	3.55	....	3.55	3.00	12.94	14.00 13.85 15.00	2058 1886 2184
.45	7.45	7.00	7.00	6.00	3.27	....	3.27	3.00	12.85	--------- 14.00 15.00	1958 1882 2105
.20	*13.47	14.00	13.27	13.00	7.20	....	7.20	6.00	21.78	20.00	2051
.60	13.42	13.00	12.82	12.00	3.19	....	3.19	3.00	17.26	16.00	2558
.56	10.98	11.00	10.37	10.00	2.31	....	2.31	2.00	14.59	16.00 18.00 16.00	1928 1902 2183
1.33	11.67	11.00	10.34	10.00	2.23	....	2.23	2.00	14.49	16.00	2320
1.18	15.06	15.00	13.88	14.00	.54	....	.54	....	15.64	15.00	2700
.93	10.99	11.00	10.06	10.00	2.20	....	2.20	2.00	14.28	16.00 15.50 15.75	2018 1872 2430
.64	13.37	13.00	12.73	12.00	.45	....	.45	....	14.59	14.00	2047
.80	11.77	11.00	10.97	10.00	2.17	....	2.17	2.00	14.94	18.00 18.00	1919 2418
.30	*11.71	12.00	11.41	11.00	2.45	....	2.45	2.00	15.48	15.50	2071
1.49	11.63	11.00	10.14	10.00	2.18	....	2.18	2.00	14.29	--------- 15.00	1969 2324
1.06	13.48	13.00	12.42	12.00	5.07	....	5.07	5.00	19.17	19.00 18.80 20.00	2325 2072 2363
.36	11.35	11.00	10.99	10.00	2.35	....	2.35	2.00	15.04	14.00	2067
.56	*10.79	11.00	10.23	10.00	2.29	....	2.29	2.00	14.47	14.20 16.00 16.00	2110 1884 2235
.94	11.61	11.00	10.67	10.00	2.07	....	2.07	2.00	14.73	16.00	2704
.94	*12.32	12.00	11.38	11.00	2.15	....	2.15	2.00	15.15	16.00 18.00 18.00	2542 2037 2679
1.40	10.43	9.00	9.08	8.00	5.74	....	5.74	5.00	16.35	16.50	2278

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*Constituent falls below guaranty.

				Phosphoric	
Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.	Soluble in water.	Reverted.
	ARMOUR FERTILIZER WORKS, BALTIMORE, MD.				
2177	Phosphate and Potash No. 1,	E. H. Houston, Saltillo,	9.21	6.97	3.62
2030 2027 2060	†Armour's Wheat and Clover Fertilizer.	Ralph Gregory, Petersburg, W. S. Henderson, Alexandria, H. A. Snyder, Strawberry Ridge.	9.35	5.87	4.22
	BALTIMORE PULVERIZING CO., BALTIMORE, MD.				
2048	Special Fall Mixture,	A. J. Bonser, Mill Creek,	11.95	1.02	7.19
	BAUGHS & SONS CO., PHILADELPHIA, PA.				
2883	Baughs' 12-5 Phosphate and Potash.	Jona Shaffer, Luthersburg,	10.58	9.89	2.67
	BAY CHEMICAL CO., BALTIMORE, MD.				
2257	Success,	John W. Shoemaker, Littlestown.	9.22	7.11	3.66
	BUFFALO FERTILIZER CO., BUFFALO, N. Y.				
2425	Phosphate and Potash,	Heillman & Shaffer, Kittanning.	10.98	6.95	5.33
2402 2057 2424	†Extra Phosphate and Potash,	A. McDonald, Greenville, C. W. Gerhart, Riverside, Heillman & Shaffer, Kittanning.	10.82	5.58	5.69
	CHESAPEAKE CHEMICAL CO., BALTIMORE, MD.				
2600	C. C. Co's Celebrated Mixture,	M. Gillis, Hughesville,	3.54	.87	6.95
2599	C. C. Co's Reliable Phosphate,	M. Gillis, Hughesville,	6.33	.40	6.93
	COE MORTIMER CO., THE, NEW YORK.				
2094 2441	†E. Frank Coe's Famous Prize Brand Grain and Grass Fertilizer.	A. W. Kenyon, Carbondale, Boettinger & Dietz, Danville, R. D. 4.	5.74	5.18	5.14
2116	E. Frank Coe's High Grade Dissolved Phosphate and Potash.	W. F. Slagle, Bloomsburg,	6.08	6.18	3.45
	HENRY COPE & CO., LINCOLN UNIVERSITY, PA.				
2157	Regular Grade Soluble Phosphoric Acid and Potash.	M. H. Mancill, Oxford,	10.40	3.65	5.84
2158	High Grade Soluble Phosphoric Acid and Potash.	M. H. Mancill, Oxford,	6.72	5.29	3.43
	JOSIAH COPE & CO., BALTIMORE, MD.				
2334	Cope's High Grade Phosphate and Potash.	C. A. Dreibelbis, Shoemakersville.	9.65	7.47	2.57
	AMOS EBY & CO., LEAMAN PLACE, PA.				
2841	Farmer's Mixture,	Harry S. Eby, Refton, Pa.,	9.34	6.94	3.24
2842	Pequea Crop Grower,	Harry S. Eby, Refton, Pa.,	10.01	7.79	3.07

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†Composite sample.

FERTILIZERS—Continued.

Acid in 100 Pounds.					Potash in 100 Pounds.				Computed commercial value of 2,000 pounds at Department rating.	Selling price of 2,000 pounds at point of selection.	Sample number.
	Total.		Available.				Total.				
Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.			
.43	11.02	10.50	10.59	10.00	2.26	....	2.26	2.00	14.43	17.00	2177
.64	10.78	10.50	10.09	10.00	5.06	....	5.06	5.00	16.92	18.00 18.00 16.00	2080 2027 2060
.64	8.85	....	8.21	8.00	3.22	....	3.22	1.00	13.00	14.00	2048
.22	12.78	....	12.56	12.00	5.37	....	5.37	5.00	19.20	19.00	2383
.23	11.00	11.00	10.77	10.00	4.47	....	*4.47	5.00	16.77	15.50	2257
1.08	13.36	13.00	12.28	12.00	5.12	....	5.12	5.00	18.62	21.00	2425
1.17	12.44	11.00	11.27	10.00	6.10	....	*6.10	8.00	18.84	23.00 20.00 22.00	2402 2057 2424
2.86	10.18	9.50	*7.32	8.00	2.60	....	2.60	2.00	12.54	13.00	2600
2.11	9.44	9.50	*7.38	8.00	3.96	....	3.96	4.00	13.92	16.00	2599
1.06	11.33	11.00	10.27	10.00	2.57	....	2.57	2.00	14.48	16.15 15.00	2094 2441
.36	9.99	9.00	9.63	8.00	5.51	....	5.51	5.00	17.06	17.00	2116
1.18	*10.67	11.00	*9.49	10.00	2.52	....	2.52	2.00	13.74	14.50	2157
.73	*9.45	10.00	*8.72	9.00	4.46	....	4.46	4.00	15.40	16.50	2158
1.31	11.35	11.00	10.04	10.00	4.68	....	*4.68	5.00	17.04	16.00	2334
1.09	11.27	11.00	10.18	10.00	4.68	....	*4.68	5.00	16.98	17.00	2341
.90	11.76	11.00	10.86	10.00	5.98	....	*5.98	7.00	18.76	19.00	2342

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*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.	Phosphoric	
				Soluble in water.	Reverted.
	EUREKA FERTILIZER CO., THE PERRYVILLE, MD.				
2140	Alkaline, No. 2,	George W. Zimmerman, Cowan,	10.28	4.46	4.50
2544	†Alkaline, No. 5,	J. M. Frick, Dillsburg,	5.13	7.51	8.55
2123		D. B. Dorrias, Thompsontown.			
2863		R. H. Long, Fishing Creek,			
	W. S. FARMER & CO., BALTIMORE, MD.				
2484	W. S. Farmer & Co's Empire Alkaline Phosphate.	J. A. Eichman, Globe Mills,	9.87	8.06	8.00
	GRIFFITH & BOYD CO., BALTIMORE, MD.				
2464	†Gem Phosphate,	James Decker, Beavertown,	7.89	.64	4.71
2052		Hartley & Blaine, Turbotville,			
2549		C. D. Gillen, Chambersburg,			
2200	†Peerless Fertilizer,††	H. R. Webner, Hummelstown,	9.35	5.09	4.48
2716		Peacock Bros., Huston,			
2331	†Soluble 12x5 Mixture,	D. W. Trump, Mohrsville,	10.90	9.28	3.14
2128		W. G. Kline, Lewisburg,			
2351		Focht & Lacey, Geigertown,			
2333	Special Alkaline Bone Mixture,	D. W. Trump, Mohrsville,	11.73	6.40	5.92
	S. M. HESS & BRO., PHILADELPHIA, PA.				
2131	Peerless Phosphate,	Thomas E. Spangler, Vicksburg.	11.63	9.24	3.02
2026	†Emporer Phosphate,	W. W. England, Water Street.,	11.07	6.04	8.92
1958	†	S. D. Snyder, Myerstown,			
2354		Harvey T. Dutt, Fletwood,			
	HOME FERTILIZER & CHEMICAL CO., BALTIMORE, MD.				
2209	Special Alkaline Mixture,	Peter Ruhl, New Freedom,	7.36	2.38	7.63
	HUBBARDS FERTILIZER CO., BALTIMORE, MD.				
1832	†Hubbards' B. & P. Phosphate, 10-2.	Wm. Thompson, Jr., Lemont,	10.98	.72	8.34
2233		J. B. Spera, Dillsburg,			
2271	Hubbards' 12-5 Alkaline,	J. Emery Moul, Iron Ridge Station.	8.58	6.28	4.98
	M. P. HUBBARD & CO., BALTIMORE, MD.				
2268	Hubbard's Soluble Rock and Potash,	Seffer & Frey, Hanover,	11.34	.88	9.94
	LANCASTER BONE FERTILIZER CO., LANCASTER, PA.				
1949	†Diamond,	G. P. McConnell, Port Royal,	6.63	5.92	8.55
2551		D. J. Rife, Chambersburg,			
2059	†Harvest King,	D. A. Schultz, Jerseytown,	7.32	4.61	3.29
1937		Geo. P. McConnell, Port Royal.			
2161		Lancaster Bone Fertilizer Co., East Downingtown.			
2671	Special Grange Mixture,	Maush & Oester, Elk Lick,	7.32	8.14	8.12
	LANCASTER CHEMICAL CO., LANCASTER, PA.				
2479	†No. 10 Economist,	F. E. Brown, Lewisburg,	9.78	4.40	5.61
2532		Thomas Gill, Enola,			

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†Composite sample.
††Sample contains .32% of nitrogen, guaranteed .29% nitrogen.

FERTILIZERS—Continued.

Acid in 100 Pounds.					Potash in 100 Pounds.				Computed commercial value of 2,000 pounds at Department rating.	Selling price of 2,000 pounds at point of selection.	Sample number.
	Total.		Available.				Total.				
Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulfate.	Found.	Guaranteed.			
1.05	*10.01	11.00	*8.96	10.00	2.22	....	2.22	2.00	13.20	15.00	2140
.40	*11.46	13.00	*11.06	12.00	3.87	....	*3.87	5.00	16.58	17.00 19.00 17.00	2544 2123 2863
.45	11.51	11.00	11.06	10.00	5.18	....	5.18	5.00	17.95	16.40	2484
4.55	9.90	7.25	*5.85	6.50	3.22	....	3.22	3.00	12.63	15.00 13.50 13.00	2464 2052 2549
2.36	11.93	9.00	9.57	8.00	2.74	....	2.74	2.00	16.20	16.00 20.00	2200 2716
.96	13.38	13.00	12.42	12.00	5.80	.31	6.11	5.00	20.18	18.00 17.00 18.50	2331 2128 2351
.98	13.30	13.00	12.32	12.00	3.21	....	3.21	3.00	16.56	16.00	2333
.40	*12.66	13.00	12.96	12.00	5.32	....	5.32	5.00	18.97	18.00	2131
.88	10.84	11.00	9.96	10.00	2.06	....	2.06	1.00	13.86	.... 19.00	2026 1958 2354
1.44	11.45	11.50	10.01	10.00	5.41	....	5.41	5.00	16.88	15.70	2299
3.31	12.37	12.00	*9.06	10.00	2.49	....	2.49	2.00	13.72	14.35 15.00	1832 2233
1.37	*12.63	14.00	*11.26	12.00	5.42	....	5.42	5.00	18.32	17.00	2271
1.44	12.21	11.50	10.77	10.00	2.02	....	2.02	2.00	13.58	13.50	2268
1.39	10.86	9.00	9.47	8.00	2.61	....	2.61	2.00	14.30	15.50 15.50	1949 2551
1.38	9.28	9.00	7.90	8.00	4.87	....	4.87	5.00	15.42	15.50 18.00	2059 1987 2161
.88	12.14	11.00	11.26	10.00	6.75	....	*6.75	8.00	19.84	22.00	2671
.92	10.98	11.00	10.01	10.00	1.79	....	*1.79	2.00	13.39	.... 16.00	2479 2532

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.	Phosphoric	
				Soluble in water.	Reverted.
	LEBANON FERTILZER WORKS, D. LEVAN, LEBANON, PA.				
2666 1955 2783	†Levan's Special Mixture Fertilizer,	Ed. Mayberry, Pine Grove, Adam Gerhart, Myerstown, Henry Stoudt, Sinking Springs,	5.12	.85	6.17
	LISTER'S AGRICULTURAL CHEMICAL WORKS, NEWARK, N. J.				
2422	Lister's Atlas Brand Alkaline Fertilizer.	G. W. Martin & Co., Saltsburg.	9.97	11.47	1.30
2423	Lister's Grain and Grass Fertilizer,	G. W. Martin & Co., Saltsburg.	9.88	6.77	2.80
1899 1890 2249	†Lister's Plant Food,	Jacob Bonser, Osterburg, S. T. Taylor, Fishertown, J. N. Hirsh, New Oxford,	6.10	3.86	3.07
1898 1891 2130	†Lister's Potash Mixture,	Jacob Bonser, Osterburg, S. T. Taylor, Fishertown, C. M. Sanders, Vicksburg,	9.53	5.90	2.30
	FREDERICK LUDLAM CO., THE NEW YORK CITY.				
2854	Ludlam's Cecrops Fertilizers Economy.	Wm. J. Hess, Quarryville,	6.88	3.89	3.12
2289	Ludlam's Cecrops Fertilizer, I. X. L. Brand.	Emanuel Hoffman, West York,	7.88	3.10	6.09
2587	Ludlam's Cecrops Fertilizer, On Top.	M. D. Ebersole, Middletown,	9.95	7.63	2.40
2855	Ludlam's Cecrops Fertilizer, Wheat Special.	Wm. J. Hess, Quarryville,	8.44	5.27	3.51
	MARTIN & WHITE CO., BALTIMORE, MD.				
2565	High Grade Phosphate and Potash,	Greencastle Elevator Company, Greencastle.	13.79	7.53	3.97
2114 2221	†Martin & White Phosphate and Potash.	W. F. Slagle, Bloomsburg, D. B. Myers, Gardners Sta.,	11.89	6.23	4.30
	MILLER FERTILIZER CO., THE, BALTIMORE, MD.				
2050 1856 2176	†Miller's Potash Mixture,	J. R. Opp, Muncy, Biglerville Warehouse Co., Biglerville. Chas. Houston & Bro., Three Springs.	10.14	2.93	7.28
	NASSAU FERTILIZER CO., NEW YORK.				
2450 2356 2495	†Potash and Phosphate,	C. W. Gerhart, Riverside, Daniel Burkhart, White Bear, J. A. Graybill & Son, Bellville.	9.69	7.70	2.46
	PATAPSCO GUANO CO., BALTIMORE, MD.				
2247	Baltimore Soluble Phosphate,	J. N. Hirsh, New Oxford,	9.63	9.27	2.55
1944 1847 2066	†Patapsco High Grade Phosphate and Potash.	J. S. Harley, Thompsontown, E. C. Thomas, Gettysburg, Walter & Frederick, Montandon.	12.35	9.81	2.34
2242 2185 2618	†Patapsco Soluble Phosphate and Potash.	Pins Reynolds, East Berlin, Francis Baker, Everett, Lawrence Imler, Osterburg,	11.59	7.99	2.48

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†Composite sample.

FERTILIZERS—Continued.

Acid in 100 Pounds.					Potash in 100 Pounds.				Computed commercial value of 2,000 pounds at Department rating.	Selling price of 2,000 pounds at point of selection.	Sample number.
	Total.		Available.				Total.				
Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulfate.	Found.	Guaranteed.			
1.32	*8.34	9.00	*7.02	8.00	5.83	....	5.83	5.00	15.22	15.00 16.50 16.00	2666 1955 2783
.43	13.20	13.00	12.77	12.00	4.95	....	4.95	5.00	19.33	21.00	2422
.57	10.14	10.00	9.57	9.00	4.73	....	*4.73	5.00	16.44	20.00	2423
.29	7.22	7.00	6.93	6.00	3.32	....	3.32	3.00	12.72	15.00 13.00 15.00	1899 1890 2249
.61	8.81	9.00	8.20	8.00	5.35	....	5.35	5.00	16.06	17.50 15.80 15.50	1898 1891 2130
.22	7.23	7.00	7.01	6.00	3.53	....	3.53	3.00	13.04	15.00	2854
1.16	10.35	9.00	9.19	8.00	3.80	....	*3.80	5.00	14.78	16.00	2289
.74	*10.77	11.00	10.03	10.00	6.89	....	6.89	6.00	19.10	17.50	2537
.45	9.23	9.00	8.78	8.00	2.71	....	2.71	2.00	13.69	15.00	2855
1.36	12.86	12.50	*11.50	12.00	4.26	....	*4.26	5.00	17.49	17.00	2565
1.14	11.67	10.50	10.53	10.00	1.80	....	*1.80	2.00	14.08	17.00 15.00	2114 2221
1.02	11.23	10.50	10.21	10.00	4.85	....	4.85	5.00	16.39	15.90 18.00 17.50	2050 1856 2176
.89	11.05	11.00	10.16	10.00	6.15	....	6.15	5.00	18.48	16.60 17.50 18.50	2450 2356 2495
.55	12.37	12.00	11.82	11.00	2.20	....	2.20	2.00	15.60	18.00	2247
.56	12.21	12.00	11.65	11.00	4.99	....	4.99	5.00	18.34	17.50 17.50 16.50	1944 1847 2066
.46	10.98	11.00	10.47	10.00	2.44	....	2.44	2.00	14.80	14.00 15.00 16.00	2242 2185 2618

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*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.	Phosphoric	
				Soluble in water.	Reverted.
	PIEDMONT MT. AIRY GUANO CO., BALTIMORE, MD.				
2275	Piedmont Economy,	N. N. Loose, Menges Mills,	8.50	5.04	4.95
2040	†Piedmont Farmers' Potash Mixture,	John Watts, McAlaveys Fort,	7.32	7.93	2.39
2493		John Watts, Belleville,			
2586	†Piedmont Special Potash Mixture,	D. F. Stitzel, Dillsburg,	7.46	7.42	1.96
2494		John Watts, Belleville,			
2780		John B. Bucher, Lititz,			
2500	Piedmont Success,	Robt. Close, Milroy,	7.69	6.73	2.75
	POLLOCK FERTILIZER CO., BALTIMORE, MD., MADE BY A. A. C. CO., N. Y.				
2781	†Pollock's Dissolved Phosphate and Potash.	Francis Baker, Everett,	7.52	7.73	2.56
1818		F. C. Ross, Lemont,			
2190		Albert Dively, Bedford, R. D. 1.			
1897	Pollock's Soluble Phosphate,	S. K. Moses, Osterburg,	10.06	8.76	2.37
2198	†Victor Brand Phosphate,	Geo. W. Dilbert, Bedford, R. D. 2.	4.43	7.17	3.17
1900		S. K. Moses, Osterburg,			
2560		L. H. Liter & Bro., Greencastle.			
	RAMSBURG FERTILIZER CO., FREDERICK, MD.				
2263	†Alkaline Phosphate,	Nelson Study, Littlestown,	10.98	.56	8.76
2571		Franklin Miller & Son, Waynecastle.			
2265	†Special Rock and Potash,	Nelson Study, Littlestown,	11.36	1.08	9.24
2515		J. D. Garman, Shippensburg,			
	RASIN MONUMENTAL CO., BALTIMORE, MD.				
1988	†Rasin's Half and Half Mixture,	S. C. Walker & Co., Chadds Ford.	7.92	2.07	3.72
1819		J. H. & S. E. Weber Boalsburg.			
2172		J. M. Lutz, Shirleysburg,			
2613	Rasin's Special Formula for Corn and Buckwheat.	A. C. Richards & Son, Schellsburg, R. D.	5.42	2.55	4.20
2062	†Rasin's Special Phosphate and Potash.	H. A. Snyder, Strawberry Ridge.	10.92	7.47	2.32
1811		C. B. McCormick, State College.			
2244		Z. M. Danner,, Abbotstown,			
1970	†Rasin's Special Wheat Potash Mixture.	Elias S. Brubacher, Richland,	9.80	6.22	2.22
1812		C. B. McCormick, State College.			
1979		E. H. Kern & Co., Parkesburg.			
	READING BONE FERTILIZER CO., READING, PA.				
1851	†Alkaline Phosphate and Potash,	Pat Bower, Table Rock Sta.,	6.67	2.52	5.94
2127	†Economy Brand,	John W. Wingert, Lewisburg,	12.02	2.80	4.42
2033		D. Ross Gregory, Petersburg,			
1853		Pat Bower, Table Rock Sta.,			
2042		John Wilson, Huntingdon, R. D. 2.			
2088	High Grade Potash Mixture,	O. P. Beebe, Montrose,	7.90	4.97	6.18
1810	†Soluble Phosphate and Potash,	Ed Corl, State College,	8.30	4.59	5.52
1852		Pat Bower, Table Rock Sta.,			

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†Composite sample.

FERTILIZERS—Continued.

Acid in 100 Pounds.					Potash in 100 Pounds.				Computed commercial value of 2,000 pounds at Department rating.	Selling price of 2,000 pounds at point of selection.	Sample number.
	Total.		Available.				Total.				
Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulfate.	Found.	Guaranteed.			
.82	10.81	....	9.99	10.00	3.09	....	3.09	2.00	14.86	16.50	2275
.74	11.06	....	10.32	10.00	2.32	....	2.32	2.00	14.64	17.00 17.00	2040 2493
.47	9.85	....	*9.38	10.00	5.82	....	5.82	5.00	17.47	16.50 19.00 18.00	2586 2494 2780
.82	10.30	....	9.48	9.00	4.34	....	*4.34	5.00	16.05	18.75	2500
.73	11.02	11.00	10.29	10.00	4.32	....	4.32	4.00	16.60	17.00 16.00	2187 1818 2190
.22	11.35	11.00	11.13	10.00	2.03	....	2.03	2.00	14.84	16.50	1897
.54	10.88	10.00	10.34	9.00	1.25	....	1.25	1.00	13.38	14.00 16.00 13.00	2193 1900 2560
3.29	12.61	....	*9.32	10.00	2.36	....	2.36	2.00	13.68	14.50 13.75	2268 2571
2.40	12.72	....	10.32	10.00	4.38	....	*4.38	5.00	16.12	16.50 15.25	2265 2515
1.24	7.03	7.00	*5.79	6.00	3.82	....	3.82	3.00	12.60	15.00 14.00 16.00	1988 1819 2172
6.74	13.49	7.00	6.75	6.00	2.97	....	2.97	3.00	14.36	12.75	2613
1.44	11.23	11.00	*9.79	10.00	4.65	....	*4.65	5.00	16.90	16.00 17.25 16.00	2062 1811 2244
1.25	9.69	9.00	8.44	8.00	4.59	....	*4.59	5.00	15.74	15.56 16.25 16.00	1970 1812 1979
1.25	9.71	9.00	8.46	8.00	5.70	....	5.70	5.00	16.16	15.50	1851 2127
1.08	8.30	7.00	7.22	6.00	3.22	....	3.22	3.00	12.88	13.50 12.75 15.00	2083 1853 2042
1.56	12.66	11.00	11.10	10.00	7.47	.30	*7.77	10.00	20.51	27.00	2088
1.47	11.58	11.00	10.11	10.00	2.30	....	2.30	2.00	14.20	14.00 14.50	1810 1852

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*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.	Phosphoric	
				Soluble in water.	Reverted.
	SCHAAL SHELDON FERTILIZER CO., ERIE, PA.				
2175 2742	†Dissolved Phosphate with Extra Potash.	O. E. Starr, Three Springs, J. E. Stoner, New Castle, R. D. 4.	10.33	8.07	2.68
	SCOTT FERTILIZER CO., THE, ELKTON, MD.				
2068	Scott's Alkaline Phosphate, 8-5,	W. H. Diehl, Northumberland, R. D. 1.	7.33	4.83	3.28
	S. M. SHULER & SONS, LIVERPOOL, PA.				
2498	Shuler's Phosphate and Potash,	W. J. Taylor, Reedsville,	9.43	6.32	2.19
	SOUTHERN FERTILIZING CO., YORK, PA.				
1840 2449	†Farmers' Mixture,	Wm. Howe, York Springs, H. E. Fisher, Riverside,	9.74	7.56	2.72
2229 2447	†Special Brand for all crops,	Wm. Howe, York Springs, H. E. Fisher, Riverside,	8.92	8.10	2.47
	D. A. THOMAS & CO., HAGERSTOWN, MD.				
2521 2562	†Pioneer,	Nickles & Stewart, Shippensburg. J. R. Davison, Greencastle,	6.69	7.61	1.89
2577	Soluble Phosphate and Potash,	J. A. Witherspoon Mercersburg.	7.00	7.84	1.96
	I. P. THOMAS & SONS CO., PHILADELPHIA, PA.				
1922 1835 1943	†Special Alkaline Fertilizer,	The Webster Hardware Co., Newbury. A. J. Harbold, Dillsburg, W. V. Shirk, Oakland Mills,	11.11	7.55	2.80
	J. E. TYGERT & CO., PHILADELPHIA, PA.				
2468 2861	†Eclipse Fertilizer,	W. A. Keelers, Kreamer, Boyd & Rae, Eldora,	9.06	4.21	2.62
2438 2862	†Electro Phosphate,	Geo. S. Miller, Mifflinville, Boyd & Rae, Eldora,	12.43	7.27	2.06
	UNION CHEMICAL WORKS, INC., NORTH WALES, PA.				
2819	**Acid Phosphate,	Henry K. Mohr, Quakertown,	14.68	*7.23	3.94
2822	Superphosphate and Potash, No. 1,	Henry K. Mohr, Quakertown,	8.44	2.77	4.82
2817	Superphosphate and Potash, No. 3,	Henry K. Mohr, Quakertown,	8.30	5.17	4.36
	VIRGINIA CAROLINA CHEMICAL CO., RICHMOND, VA.				
2476	V. C. C. Co's Corn and Buckwheat Special.	Isaac Kunkle, Winfield,	8.45	2.11	8.77
2253	V. C. C. Co's Special Phosphate and Potash.	J. C. Bireley, New Oxford,	10.43	7.95	2.84
	ROBERT A. WOOLDRIDGE CO., THE, BALTIMORE, MD.				
2065	Liberty Bell Potash Mixture,	Harry V. Smith, Schuyler,	11.57	9.63	2.71
1880	Wooldridge No. 1 Phosphate and Potash.	Wm. Kreiser, Lickdale,	6.26	1.91	4.50
2378 2458	†Wooldridge Old Sledge Phosphate,	Wm. Klein, Palmyra, C. C. Cathaman, Hartleton,	11.11	10.06	2.48

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†Composite sample.
**Guaranteed 14% soluble phosphoric acid.

FERTILIZERS—Continued.

Acid in 100 Pounds.					Potash in 100 Pounds.				Computed commercial value of 2,000 pounds at Department rating.	Selling price of 2,000 pounds at point of selection.	Sample number.
	Total.		Available.				Total.				
Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulfate.	Found.	Guaranteed.			
1.23	11.98	11.00	10.75	10.00	4.09	....	4.09	4.00	16.94	17.00	2175
										19.00	2742
1.56	9.17	....	*7.61	8.00	5.33	....	5.33	5.00	15.76	15.00	2068
.73	9.24	9.00	8.51	8.00	2.23	....	2.23	2.00	14.53	....	2498
.62	10.90	11.00	10.28	10.00	2.37	....	2.37	2.00	14.56	14.20	1840
										14.00	2449
.51	11.08	11.00	10.57	10.00	6.26	....	6.26	6.00	18.79	17.50	2229
										17.25	2447
.55	10.05	9.00	9.50	8.00	4.81	....	*4.31	5.00	16.06	15.00	2521
										14.50	2562
.55	*10.34	11.00	*9.79	10.00	2.39	....	2.39	2.00	14.35	14.00	2577
.87	11.22	11.00	10.35	10.00	4.07	....	4.07	4.00	16.40	18.00	1922
										17.00	1835
										16.00	1943
.83	7.66	7.00	6.83	6.00	3.00	....	3.00	3.00	12.35	13.00	2468
										13.00	2861
1.00	*10.33	11.00	*9.33	10.00	4.81	....	4.81	5.00	16.59	18.60	2438
										15.00	2862
.86	12.08	....	11.17	....	1.52	....	1.52	....	14.28	14.00	2819
1.00	8.59	....	*7.59	8.00	1.94	....	1.94	2.00	11.82	15.00	2822
.81	10.34	....	*9.53	10.00	4.89	....	4.89	5.00	16.24	19.00	2817
1.57	7.45	7.00	5.88	6.00	3.15	....	3.15	3.00	12.12	13.00	2476
1.26	12.05	11.00	10.79	10.00	4.86	....	4.86	5.00	17.72	16.00	2258
.58	12.87	13.00	12.34	12.00	3.10	....	3.10	3.00	16.89	15.75	2065
.82	7.23	7.00	6.41	6.00	3.06	....	3.06	3.00	12.02	15.00	1880
.68	13.22	13.00	12.54	12.00	5.25	....	5.25	5.00	19.32	19.00	2378
										18.05	2458

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*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.	Phosphoric	
				Soluble in water.	Reverted.
	WOOLDRIDGE FERTILIZER CO., THE, BALTIMORE, MD.				
2767	Virginia Belle Potash Mixture, -----	E. O. Hacker, Ephrata, ------	11.40	6.68	6.20
	YORK CHEMICAL WORKS, YORK, PA.				
2170	Dempwolf's Wheat Special Fertilizer,	John M. Bush, Shirleysburg,	8.79	7.55	3.22

FERTILIZERS—Continued.

Acid in 100 Pounds.					Potash in 100 Pounds.				Computed commercial value of 2,000 pounds at Department rating.	Selling price of 2,000 pounds at point of selection.	Sample number.
	Total.		Available.				Total.				
Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulfate.	Found.	Guaranteed.			
.41	13.29	12.50	12.88	12.00	3.20	--------	3.20	3.00	16.76	17.50	2767
.45	11.22	10.50	10.77	10.00	1.82	--------	1.82	2.00	14.22	14.50	2170

DISSOLVED BONE

Furnishing Phosphoric

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.
	AMERICAN AGRICULTURAL CHEMICAL CO., NEW YORK.	
2288	†Dissolved Animal Bone,	Emanuel Hoffman, West York,
2824		H. R. Passmore & Bro., Kelton,
	EUREKA FERTILIZER CO., PERRYVILLE, MD.	
2550	†Dissolved Animal Bone,	W. H. Harrison, Chambersburg,
2684		W. M. Davis, Greenboro,
	MILLER FERTILIZER CO., BALTIMORE, MD.	
2472	Dissolved Raw Bone,	Howard Klinger, Selins Grove,
	PITTSBURG PROVISION & PACKING CO., PITTSBURG, PA.	
2717	Guano Fertilizer,	Dunlap Bros., Cannonsburg,

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†Composite sample.

FERTILIZERS.

Acid and Nitrogen.

Moisture in 100 pounds.	Phosphoric Acid in 100 Pounds.							Nitrogen in 100 Pounds.		Computed commercial value of 2,000 pounds at Department rating.	Selling price of 2,000 pounds at point of selection.	Sample number.
	Soluble in water.	Reverted.	Insoluble.	Total.		Available.						
				Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.			
11.98	7.79	5.94	1.06	14.79	14.00	13.73	12.00	2.05	2.06	27.68	-------- 26.00	2288 2824
8.56	4.44	4.98	5.87	15.29	13.00	*9.42	12.00	2.01	1.65	25.22	28.00 28.00	2550 2684
8.72	9.85	1.84	2.18	13.87	11.50	11.69	11.00	2.54	2.06	28.65	28.00	2472
3.84	6.21	3.25	2.70	12.16	11.00	9.46	9.00	1.45	1.43	21.27	22.00	2717

*Constituent falls below guaranty.

GROUND BONE

Furnishing Phosphoric

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.
	AHRENS FERTILIZER CO., THE, EASTERLY, PA.	
2368	Pure Bone Meal,	Val Urich, ordered from factory for own use, Myerstown.
	AMERICAN AGRICULTURAL CHEMICAL CO., NEW YORK.	
2567	†Pure Ground Bone,	Greencastle Elevator Co., Greencastle,
2429		Scalp Level Supply Co., Scalp Level,
2714		S. E. Hood, Hookstown, R. D. 2,
	ARMOUR FERTILIZER WORKS, BALTIMORE, MD.	
2411	Raw Bone Meal,	D. J. Davis, Ebensburg,
	BAUGHS & SONS CO., PHILADELPHIA, PA.	
1982	†Baughs' Fine Ground Bone,	E. H. Kern & Co., Parkesburg,
1854		Biglerville Warehouse Co., Biglerville,
2121		Zehner Bros., Bloomsburg,
	BOWKER FERTILIZER CO., NEW YORK.	
2749	Bowker's Fresh Ground Bone,	N. M. Dodd, Beaver Falls, R. D. 2,
2805	†Bowker's Market Bone,	Harvey Moses, Chester Springs,
2881		F. E. Neff & Co., Coudersport,
	CAMBRIA FERTILIZER CO., THE, JOHNSTOWN, PA.	
2413	Pure Fine Ground Bone Dust,	Schetty Bros., Ebensburg,
	COE-MORTIMER CO., THE, NEW YORK.	
2442	E. Frank Coe's X. X. X. Pure Ground Bone.	Boettinger & Dietz, Danville, R. D. 4,
	HENRY COPE & CO., LINCOLN UNIVERSITY, PA.	
2125	Raw Bone,	M. H. Mancill, Oxford,
	JOSIAH COPE & CO., BALTIMORE, MD.	
2836	Cope's Pure Ground Raw Bone,	James Eavenson, Christiana,
	EUREKA FERTILIZER CO., PERRYVILLE, MD.	
2685	Ground Bone,	W. M. Davis, Greenboro,
	GRIFFITH & BOYD CO., BALTIMORE, MD.	
2160	†Pure Fine Ground Bone Meal,	F. E. Bailey, Northbrook,
2103		E. A. Slagle, Paxinos,
2281		G. N. Wolf Sons, Mt. Wolf,
	HIRSH STEIN & CO., CHICAGO, ILL.	
2724	Calumut Brand Special Pure Bone Meal.	J. Auld, Rochester, R. D. 1,

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†Composite sample.

FERTILIZERS.

Acid and Nitrogen.

Moisture in 100 pounds.	Mechanical Analysis.		Chemical Analysis.				Computed commercial value of 2,000 pounds at Department rating.	Selling price of 2,000 pounds at point of selection.	Sample number.
	Diameter less than 1-50 inch "fine."	Diameter greater than 1-50 inch "coarse."	Phosphoric Acid.		Nitrogen.				
			Found.	Guaranteed.	Found.	Guaranteed.			
6.83	55	45	*19.40	20.61	4.99	2.88	35.44	32.00	2368
6.11	41	59	22.78	20.59	3.70	3.29	32.05	32.00 31.00 33.00	2567 2429 2714
6.69	32	68	22.84	22.00	3.95	3.70	32.60	29.50	2411
8.99	77	23	*15.70	16.49	2.67	2.47	24.59	27.00 30.00 28.00	1982 1854 2121
5.32	80	20	26.68	22.88	2.81	2.47	32.95	30.00	2749
5.67	72	28	25.40	18.30	1.94	1.65	28.30	30.00 30.00	2805 2881
4.51	70	30	24.92	20.00	3.30	3.00	33.25	30.00	2413
6.17	80	20	24.55	23.00	2.35	2.50	29.66	32.00	2442
5.39	60	40	21.87	21.00	3.50	3.30	31.50	29.00	2155
5.82	86	14	21.71	20.59	3.77	3.70	33.52	29.00	2836
4.82	80	20	24.62	23.00	3.00	2.50	32.28	32.00	2685
5.18	62	38	*20.50	22.00	3.62	3.30	31.06	30.00 30.00 29.00	2160 2103 2281
4.89	54	46	30.11	29.77	1.20	....	27.85	30.00	2724

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*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.
	KEYSTONE BONE FERTILIZER CO., PHILADELPHIA, PA.	
2118	Keystone Pure Ground Bone,	Daniel F. Knittle, Catalwssa, R. D. 2,
	LEBANON FERTILIZER WORKS, LEBANON, PA., D. LEVAN.	
1861	††Levan's Pure Fine Ground Bone Meal.	Adam Gerhart, Myerstown,
	LISTER'S AGRICULTURAL CHEMICAL WORKS, NEWARK, N. J.	
2021 1892 2101	†Lister's Bone Meal,	Wm. H. Fritz, Berwyn, S. T. Taylor, Fishertown, H. M. Gordy, Stonington,
	MILLER FERTILIZER CO., BALTIMORE, MD.	
2150 2144 2241	†Ground Bone,	Miller T. Harkins, Oxford, Gonser & Noll, Lewisburg, A. B. Brown, East Berlin,
	PATAPSCO GUANO CO., BALTIMORE, MD.	
2718	Patapsco Pure Ground Bone,	R. J. Mathers, Cannonsburg, R. D. 4,
	PITTSBURG PROVISION & PACKING CO., PITTSBURG, PA.	
2710	No. 1 Pure Raw Bone Meal,	F. Baxmier & Co., Pittsburg,
2433	Pure Raw Bone Meal,	J. A. Farradaugh, Bradleys Junction,
	POLLOCK FERTILIZER CO., THE, BALTIMORE, MD.	
2512	Pollock's Ground Animal Bone,	J. D. Garman, Mowersville,
	PUGH & LYONS, OXFORD, PA.	
2147	Ground Raw Bone,	S. R. Dickey & Co., Oxford, Pa.,
	READING BONE FERTILIZER CO., READING, PA.	
2782	Pure Bone Meal,	B. F. Hershey, Manheim,
	ROBERT A. REICHARD, ALLENTOWN, PA.	
2652	Pure Ground Bone,	Reuben Kemmerer, Andreas,
	SCOTT FERTILIZER CO., THE, ELKTON, MD.	
2002	Scott's Pure Ground Raw Bone,	John B. Satterthwaite, Woodbourne,
	M. L. SHOEMAKER & CO., PHILADELPHIA, PA.	
2656	Pure Raw Bone Meal,	L. Steigerwalt, Andreas,
2096	Swift Sure Bone Meal,	S. E. Franklin, Waverly,
	SMITH AGRICULTURAL CHEMICAL CO., THE, COLUMBUS, OHIO.	
2739	Bone Meal,	J. Audley Book, Newcastle, R. D. 4,
	SWIFT & CO., CHICAGO, ILL.	
2405	Swift's Pure Bone Meal,	W. J. Kennedy Hardware Co., Mars,
	EMIL WAHL, PHILADELPHIA, PA.	
1983 1989	†Emil Wahl's Warranted Pure Philadelphia Button Bone Meal.	Hilles & Taggert, Norristown, S. C. Walker Co., Chadds Ford,

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†Composite sample. †† Adulterated with meat, and phosphates other than bone.

FERTILIZERS—Continued.

Moisture in 100 pounds.	Mechanical Analysis.		Chemical Analysis.				Computed commercial value of 2,000 pounds at Department rating.	Selling price of 2,000 pounds at point of selection.	Sample number.
	Diameter less than 1-50 inch "fine."	Diameter greater than 1-50 inch "coarse."	Phosphoric Acid.		Nitrogen.				
			Found.	Guaranteed.	Found.	Guaranteed.			
2.89	81	19	30.04	23.00	*1.52	2.06	30.15	30.00	2113
5.78	----------	----------	*18.23	27.00	2.63	2.55	----------	26.00	1881
6.23	46	54	22.78	22.88	3.66	2.67	32.10	34.00 28.00 30.00	2021 1892 2101
4.43	56	44	15.27	13.70	2.59	2.47	23.44	29.00 29.00 27.00	2150 2144 2241
4.98	50	50	22.42	20.59	3.67	3.70	32.01	32.00	2718
3.26 3.62	73 75	27 25	*20.84 21.48	22.00 21.00	4.05 4.14	3.70 3.70	33.54 34.46	28.00 27.00	2710 2433
5.34	44	56	22.72	21.51	3.74	3.29	32.31	31.00	2512
6.54	38	62	22.63	20.00	4.14	3.30	33.51	31.50	2147
4.03	61	39	*15.32	18.32	2.60	2.46	23.22	30.00	2782
3.87	73	27	22.83	22.00	2.87	2.88	30.18	30.00	2652
6.55	59	41	22.45	21.50	3.61	3.30	32.23	33.00	2002
4.70 2.59	75 84	25 16	23.46 24.69	20.00 20.00	3.79 4.75	3.30 4.53	34.56 39.54	32.00 32.00	2656 2096
2.32	70	30	21.00	20.00	1.64	1.64	24.26	28.00	2739
3.76	77	23	24.97	25.00	2.39	2.50	30.01	27.50	2405
10.39	74	26	*23.37	24.59	*3.04	3.30	31.34	31.00 29.00	1983 1989

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*Constituent falls below guaranty.

ACIDULATED

Furnishing

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.
	AMERICAN AGRICULTURAL CHEMICAL CO., NEW YORK.	
2439	Acid Phosphate,	H. D. Miller, Mifflinville,
2321	†Great Eastern Dissolved Acid Phosphate.	James F. Neftzinger, Hamburg,
2722		J. C. Hunter, Beaver, R. D. 4,
1824	Great Eastern Unammoniated Wheat Special.	F. H. Clemson, Stormstown,
2518	†Moro-Phillips' Soluble Phosphate,	Nichles & Stewart, Shippensburg,
2800		B. F. Walters, Christiana,
2608	Packers Union Superior Acid Phosphate.	B. C. Buck, Hughesville, R. D. 1,
2073	†Reeses Elm Phosphate,	J. K. Hetrick, Sunbury,
1888		N. R. Wolf, Osterburg, R. D.,
2415		J. C. Smyers, Deckers Point,
2561	†Susquehanna Soluble Phosphate,	J. R. Davison, Greencastle,
1883		J. W. Imler, Imler,
2595		Ellis Eves & Bro., Millville,
1898	†Wheeler's Unammoniated Wheat Grower.	W. B. Weyant, Imler,
1815		Boyd Noll, Zion,
1906		J. A. Gummo, Salona,
2702	Williams & Clarke Acorn Acid Phosphate.	T. R. Crayton, Canton,
2041	Zell's Dissolved Phosphate,	James Blair, Huntingdon, R. D. 2,
	AMERICAN FERTILIZING CO., BALTIMORE, MD.	
2313	High Grade Acid Phosphate,	Fissel & Laner, Dover,
	BAY CHEMICAL CO., BALTIMORE, MD.	
2539	Florida Phosphate,	Willis F. Hoffman, Rossville,
	BOWKER FERTILIZER CO., NEW YORK.	
2045	†Bowker's Apex Phosphate,	B. F. Frick, Huntingdon,
2182		H. F. Gump & Son, Everett,
	GRIFFITH & BOYD CO., BALTIMORE, MD.	
1924	Original Superphosphate,	Weaver & Callahan, Montoursville,
	HUBBARD FERTILIZER CO., BALTIMORE, MD.	
1912	†Hubbard's 14% Phosphate,	J. H. Long, Rosecrans,
1831		Wm. Thompson, Jr., Lemont,
2109		Adam Rarig, Catawissa,
	LANCASTER BONE FERTILIZER CO., LANCASTER, PA.	
2056	†Independent Grain Grower,	H. Vincent, Danville, R. D. 1,
2610		Daniel Replogle, New Enterprise, R. D.,
	LANCASTER CHEMICAL CO., LANCASTER, PA.	
2890	No. 8 Acid Phosphate,	Q. B. Myers, Leola,
	D. B. MARTIN CO., PHILADELPHIA, PA.	
2165	Martin's Acid Phosphate,	Henry S. Zook, Elverson,

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†Composite sample.

ROCK PHOSPHATE.

Phosphoric Acid.

Moisture in 100 pounds.	Phosphoric Acid in 100 Pounds.							Computed commercial value of 2,000 pounds at Department rating.	Selling price of 2,000 pounds at point of selection.	Sample number.
	Soluble in water.	Reverted.	Insoluble.	Total.		Available.				
				Found.	Guaranteed.	Found.	Guaranteed.			
8.81	12.69	2.75	1.69	17.13	15.00	15.44	14.00	15.88	14.00	2439
10.35	11.09	3.49	2.22	16.80	15.00	14.58	14.00	15.96	14.00 16.00	2321 2722
8.22	11.49	3.47	.50	15.46	13.00	14.96	12.00	14.43	14.50	1824
9.18	11.50	2.93	1.05	15.48	15.00	14.43	14.00	14.34	14.00 12.50	2518 2800
6.27	12.08	3.27	1.04	16.39	15.00	15.35	14.00	14.98	13.00	2608
5.74	11.92	3.48	.33	15.73	15.00	15.40	14.00	14.71	14.60 14.80 15.00	2073 1838 2415
9.46	11.96	2.96	.69	15.61	15.00	14.92	14.00	15.75	13.00 15.00 15.00	2561 1833 2595
4.88	10.24	2.45	.51	13.20	13.00	12.69	12.00	12.84	14.00 13.50 13.50	1898 1815 1906
8.43	12.12	3.15	1.95	17.22	15.00	15.27	14.00	15.25	14.00	2708
9.93	12.49	2.08	1.50	16.07	15.00	14.57	14.00	14.78	15.00	2041
10.25	10.17	5.11	1.41	16.69	15.00	15.28	14.00	15.92	14.00	2313
9.97	11.00	4.15	.34	15.49	15.00	15.15	14.00	14.42	14.00	2539
7.17	8.34	2.62	.42	11.38	10.00	10.96	9.00	11.42	13.00 13.00	2045 2182
8.55	5.19	7.94	3.22	16.35	13.00	13.13	12.00	13.18	15.00	1924
11.07	11.15	3.69	1.34	16.18	15.75	14.84	14.00	14.61	15.50 13.95 15.00	1912 1831 2109
3.64	5.99	5.60	1.66	13.25	12.00	11.59	10.00	11.83	13.00	2056 2610
6.74	8.26	5.25	1.36	*19.70	15.00	*13.42	14.00	13.94	12.50	2890
10.20	11.04	3.16	.77	14.97	....	14.20	14.00	13.98	12.50	2165

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*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.
	PATAPSCO GUANO CO., BALTIMORE, MD.	
2248	Battle Axe Phosphate,	J. M. Hersch, New Oxford,
1921	†Patapsco Pure Dissolved S. C. Phosphate.	E. E. Heckman, Salona, R. D. 1,
1845		E. C. Thomas, Gettysburg,
2585		J. O. S. Burkholder, Hummelstown,
	RAMSBURG FERTILIZER CO., FREDERICK, MD.	
2572	Superphosphate,	Franklin Miller & Son, Waynecastle,
	RASIN-MONUMENTAL CO., BALTIMORE, MD.	
1960	†Rasin's Acid Phosphate,	E. H. Kern, Clarksburg,
1813		C. B. McCormick, State College,
2266		J. D. Markle, Hanover,
2267	Sea Wall Special,	J. D. Markle, Hanover.
	READING BONE FERTILIZER CO., READING, PA.	
2640	Soluble Dissolved Phosphate,	Amandus Wotring, Schnecksville,
	SCOTT FERTILIZER CO., THE, ELKTON, MD.	
2852	Scott's Tip Top Soluble Phosphate,	S. Book & Bro., Quarryville,
	M. L. SHOEMAKER & CO., PHILADELPHIA, PA.	
2506	Dissolved South Carolina Rock,	Aaron Bickeler, ordered from factory, Jonestown.
	SMITH AGRICULTURAL CHEMICAL CO., THE, COLUMBUS, OHIO.	
2741	Ohio Farmers' Alkaline Phosphate,	J. Audley Book, New Castle, R. D. 4,
	I. P. THOMAS & SONS CO., PHILADELPHIA, PA.	
2575	S. C. Phosphate,	West & West, Waynesboro,
	F. W. TUNNELL & CO., PHILADELPHIA, PA.	
2100	†Dissolved Rock Phosphate,	Harry Leiby, Snydertown,
2639		W. M. Gehman, Macungie,
	TUSCARORA FERTILIZER CO., BALTIMORE, MD.	
2563	Acid Phosphate,	Geo. Walker, Chambersburg,
	VIRGINIA CAROLINA CHEMICAL CO., RICHMOND, VA.	
2254	V. C. C. Co's Guaranteed 14% Acid Phosphate.	J. C. Bierly, New Oxford,
	YORK CHEMICAL CO., YORK, PA.	
1820	†Dissolved Phosphate,	Leonard Rhone, Center Hall,
2004		Harry Raup, Ottawa,

†Composite sample.

PHOSPHATE—Continued.

Moisture in 100 pounds.	Phosphoric Acid in 100 Pounds.							Computed commercial value of 2,000 pounds at Department rating.	Selling price of 2,000 pounds at point of selection.	Sample number.
	Soluble in water.	Reverted.	Insoluble.	Total.		Available.				
				Found.	Guaranteed.	Found.	Guaranteed.			
7.81	11.37	2.97	.41	14.75	13.00	14.34	12.00	13.98	14.00	2248
8.18	12.40	2.77	.36	15.58	15.00	15.17	14.00	14.57	14.50 14.00 13.00	1921 1845 2535
10.94	8.80	6.62	1.75	17.17	....	15.42	14.00	14.66	13.00	2572
5.60	10.95	3.38	1.57	15.90	15.00	14.33	14.00	14.34	13.00 14.40 13.50	1980 1818 2266
7.26	7.38	3.44	2.70	13.52	11.00	10.82	10.00	11.92	12.50	2267
6.69	4.84	7.85	1.72	14.41	13.00	12.69	12.00	12.31	13.00	2640
7.76	13.72	3.57	.70	17.99	....	17.29	14.00	16.82	15.00	2852
9.95	8.88	3.12	.89	*12.89	15.00	*12.00	14.00	12.33	16.00	2506
6.89	8.83	5.79	2.77	17.39	15.00	14.62	14.00	14.58	18.00	2741
8.78	11.40	3.86	.68	15.94	15.00	15.26	14.00	14.66	15.00	2575
7.41	5.67	9.19	1.81	16.67	15.00	14.86	14.00	13.77	14.00 15.00	2100 2689
8.00	10.17	4.69	.19	15.05	14.50	14.86	14.00	14.01	12.50	2558
7.20	11.82	3.99	1.11	16.92	15.00	15.81	14.00	15.20	12.00	2254
9.40	11.54	3.00	.77	15.31	15.00	14.54	14.00	14.29	13.10 14.00	1820 2064

*Constituent falls below guaranty.

MISCELLANEOUS

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.	Phosphoric	
				Soluble in water.	Reverted.
	AMERICAN AGRICULTURAL CHEMICAL CO., NEW YORK.				
2510	Ground Tankage,	J. D. Garman, Mowersville,	5.65	------	------
2588	High Grade Dried Blood,	E. H. Sloan, Orangeville,	6.38	------	------
2556 1887 2705	†Muriate of Potash,	Diehl, Omwake & Diehl, Chambersburg. M. Grove, Bellefonte, J. L. Ward, Towanda,	.95	------	------
	BAUGH & SONS CO., PHILADELPHIA, PA.				
2523	Genuine German Kainit,	S. E. Shenk, Newville,	.26	------	------
2584 2873	†Muriate of Potash,	C. F. Fendricks, Mercersburg, S. J. Luther, Carrolltown,	.01	------	------
	BUFFALO FERTILIZER CO., THE, BUFFALO, N. Y.				
2430	††Garbage Tankage,	A. Georg & Son, Homer City,	4.08	------	------
2058 2431	†Muriate of Potash,	C. W. Gearhart, Riverside, A. Georg & Son, Homer City,	.19	------	------
	COE-MORTIMER CO., NEW YORK CITY.				
2093	Muriate of Potash,	A. W. Kenyon, Carbondale,	1.38	------	------
2084 1894 2446	††Thomas' Phosphate Powder (Basic Slag Phosphate).	Snedeker & Mitchel, Troy, A. C. Richards & Son, Manns Choice, Boettinger & Dietz, Danville, R. D. 4.	.08	------	------
	JOSIAH COPE & CO., BALTIMORE, MD.				
2091	Dried Blood,	T. H. Ball, Montrose,	9.66	------	------
2090	Muriate of Potash,	T. H. Ball, Montrose,	1.50	------	------
2092	Nitrate of Soda,	T. H. Ball, Montrose,	1.11	------	------
	EUREKA FERTILIZER CO., PERRYVILLE, MD.				
2511 2867	†Muriate of Potash,	J. D. Garman, Mowersville, R. H. Long, Fishing Creek,	.38	------	------
	GERMAN KALI WORKS, BALTIMORE, MD.				
2834	Muriate of Potash,	Long & Bunting, Oxford,	1.49	------	------
	ESTATE OF JACOB REESE, DARBY, PA.				
2807	††Odorless Slag Phosphate,	Samuel Brinton, West Chester,	.43	------	------
	WOOLDRIDGE FERTILIZER CO., BALTIMORE, MD.				
2406 1926 2580	††Curacao Guano,	A. B. Markley, Swineford, John Artley, Muncy, J. A. Witherspoon, Mercersburg.	8.47	0.00	5.98
	YORK CHEMICAL WORKS, YORK, PA.				
1910	Muriate of Potash,	The J. N. Getz Co., Salona,	.79	------	------

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†Composite sample.
††Valuation omitted from lack of satisfactory data for competitive wholesale prices.

FERTILIZERS.

Acid in 100 Pounds.					Potash in 100 Pounds.				Nitrogen in 100 lbs.				
	Total.		Available.				Total.						
Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.	Computed commercial value of 2,000 pounds at Department rating.	Selling price of 2,000 pounds at point of selection.	Sample number.
15.39	13.78	------	------	------	------	------	------	------	4.85	4.94	34.08	30.60	2510
------	15.39	13.78	------	------	------	------	------	------	10.04	9.87	51.44	50.00	2563
------	------	------	------	------	55.64	------	55.64	49.00	------	------	58.76	48.00	2556
												------	1827
												50.00	2705
------	------	------	------	------	14.19	------	14.19	12.00	------	------	16.49	14.00	2523
------	------	------	------	------	46.86	------	*46.86	48.00	------	------	49.78	------	2594
------	------	------	------	------	------	------	------	------	------	------	------	50.00	2873
------	*2.99	4.00	------	------	.69	------	.69	.75	2.95	2.25	------	------	2420
------	------	------	------	------	58.03	------	58.03	48.00	------	------	56.11	45.00	2058
												------	2421
------	------	------	------	------	51.38	------	51.38	48.00	------	------	54.43	43.70	2093
------	17.79	17.00	------	------	------	------	------	------	------	------	------	23.00	2084
												------	1894
												23.00	2446
------	------	------	------	------	------	------	------	------	9.94	9.89	50.96	44.75	2091
------	------	------	------	------	------	------	------	------	------	------	54.94	38.25	2090
------	------	------	------	------	51.90	------	51.90	49.00	15.79	15.00	62.67	47.75	2099
------	------	------	------	------	53.25	------	53.25	50.00	------	------	56.31	42.90	2511
												45.00	2867
------	------	------	------	------	51.25	------	51.25	50.00	------	------	54.27	45.00	2834
------	18.63	18.00	------	------	------	------	------	------	------	------	------	16.00	2807
19.18	25.11	20.00	*5.98	8.50	------	------	------	------	------	------	------	18.00	2466
									------	------	------	18.00	1925
												18.00	2589
------	------	------	------	------	51.33	------	51.38	50.00	------	------	54.88	43.50	1910

*Constituent falls below guaranty.

INSTRUCTIONS TO AGENTS ENGAGED IN COLLECTING SAMPLES OF FERTILIZERS FOR THE DEPARTMENT OF AGRICULTURE OF PENNSYLVANIA.

Fertilizer manufacturers sometimes allege that there have been errors made on the part of our sampling agents in selecting samples for analysis. It is due these manufacturers, as well as this Department, that the greatest care shall be exercised on the part of all connected with this work, to insure that the samples are fairly taken, are properly labeled and sealed, and are sent to the chemist in exactly the condition in which the goods were found. In order, therefore, that there may be uniformity of practice on the part of our agents, the following instructions have been prepared for their guidance, and strict adherence to these directions is required:

1st—No sample shall be taken from the manufacturer's warehouse.

2nd.—No agent shall draw more than two samples of any one brand of fertilizer, unless for some special reason, which he shall state in his report.

3d.—Two samples of each brand shall be taken, if possible, selecting them from different localities.

4th.—Each agent shall make report from time to time in duplicate, giving the number of each sample taken, in consecutive order; the name and the address of the manufacturer, the name and address of the agent selling the goods from which the sample is taken; an EXACT copy of the name of the brand of fertilizer; and the selling price per ton of 2,000 lbs. at a point of selection. He shall then subscribe his name to each report and send one copy to the official chemist and the other to the Secretary of Agriculture, at Harrisburg, Pa.

5th—Agents shall keep full memoranda of all the samples; stating the number of packages from which the sample is taken, together with such additional notes of information as may be of service for future reference, in case the accuracy of their work is called in question.

6th.—The sample for analysis must be taken from at least four sacks. The sampling tube to be run its full length from the top toward the bottom down the centre of the sack, then turned two or three times to fill it, and the contents emptied upon a sheet of clean, tough paper. The samples from the four sacks to be then thoroughly mixed together, rolling the fertilizer back and forth across the paper by lifting the sides alternately. After thoroughly mixing, take a spatula and run it close along the paper under the mixture, lifting it straight up so as to get a perfect cross section of the heap.

7th.—The sample taken as in paragraph 6, is to be AT ONCE packed into the glass bottle provided for the purpose; the lid immediately screwed down tight, and upon the label attached, give the name of the sampling agent and the number of the sample, as marked upon the agent's list. The bottle containing the fertilizer, to be at once inserted into the paper case provided, first writing his name and the number corresponding to that on the bottle on the outside of the case. Then moisten the gum flap and seal securely.

8th.—In shipping to the chemist, great care is to be taken to so pack the bottles as to avoid breaking, and the shipping directions should be securely attached to the package, with the name of the sampling agent marked on the box.

9th.—Agents will keep the Secretary of Agriculture informed in advance of the points to be visited, so as to be promptly reached by telegraph or mail, if necessary.

SPECIAL NOTICE.

This Department expects to continue the publication, early in each year, of a list of fertilizer manufacturers who have complied with the law of this State by filing with the Department the required analysis and paying the legal license fee, together with the trade names of the several brands for which such fees have been paid, so that dealers may be able to avoid making themselves liable to prosecution.

The policy of the Department heretofore has been to bring prosecutions against manufacturers, when they can be reached, rather than against local dealers who are found selling unregistered goods, or goods that in other respects fail to meet the requirements of the law.

It has been found, however, that in pursuing this method exclusively, we are sometimes subject to long delays before the cases brought, come to trial, and as our witnesses are agents and chemists of the Department who are liable to change, it sometimes happens that before the cases are listed for trial they have gone to some other field and their presence in Court cannot be secured.

For this reason prosecutions, when necessary, will hereafter be instituted either against the manufacturers or persons selling goods that do not comply with the law as we may elect.

N. B. CRITCHFIELD,
Secretary of Agriculture.

Commonwealth of Pennsylvania.

DEPARTMENT OF AGRICULTURE,
BUREAU OF CHEMISTRY.

Bulletin No. 204.

Analysis of Paris Green,

1910.

JAMES W. KELLOGG,
Chief Chemist.

PUBLISHED BY DIRECTION OF THE SECRETARY OF AGRICULTURE.

HARRISBURG:
C. E. AUGHINBAUGH, PRINTER TO THE STATE OF PENNSYLVANIA
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*Employed by the Dairy and Food Bureau.

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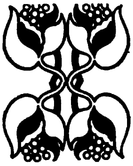

LETTER OF TRANSMITTAL.

DEPARTMENT OF AGRICULTURE.
BUREAU OF CHEMISTRY.

Harrisburg, Pa., January 27, 1911.

Hon. N. B. Critchfield,
Secretary of Agriculture,
Harrisburg, Pa.

Dear Sir:—I have the honor to transmit herewith a report of the results obtained in the chemical examination of samples of Paris green secured in the open markets of Pennsylvania, during the year 1910. In addition to the tabulated results of analyses such information is included in this report as was considered to be of importance.

Very respectfully,

JAMES W. KELLOGG,
Chief Chemist.

BULLETIN No. 204.

ANALYSIS OF PARIS GREEN

1910.

By JAMES W. KELLOGG.*

INTRODUCTION.

This bulletin is a report of the work accomplished by the Bureau of Chemistry of the Pennsylvania Department of Agriculture, in the analysis and examination of Paris green sold in the State during the year 1910, in accordance with the provisions of an act approved May 29th, 1907, regulating the sale of Paris green. This act requires that Paris green shall contain not less than fifty per centum of arsenic in combination with copper, and not more than three and one-half per centum of arsenic in water soluble forms, both forms estimated as arsenious oxide.

During the year a special agent of the Department secured four hundred and seventeen samples of Paris green from dealers located throughout Pennsylvania. All these samples have been analyzed, and the results obtained are given in the accompanying table. The packages containing the samples were examined as to their labelling and guarantees, and a report made in each case by the agent.

Quite a number of cases were reported where the proper guarantees and labels were not affixed to the packages containing the green. There were not as many violations of this nature as were found during the previous year. The failure to properly label these goods was probably due more to negligence and ignorance of the law than to any intent at wilful violations. In all cases where the manufacturers were notified, a ready willingness was shown to comply with the law, and labels were sent to dealers with a request to place them on packages which were not properly labeled. Only two samples out of the number not guaranteed, were found, which did not meet the required amount of arsenious oxide combined with copper. The majority of the remaining samples, not guaranteed, ran considerably over the required amount. No samples were found to contain water soluble arsenious oxide in excess of three and one-half per centum.

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*Acknowledgment is due to Dr. Franklin Menges, Special Assistant Chemist, who performed the analytical work herein reported, and also to Mr. John S. Spicer, First Assistant Chemist, for assistance in preparing reports.

One sample was received in which no arsenic or copper were detected, and this sample was found to resemble Paris green in color and to be composed of barium sulphate, calcium sulphate, lead chromate and Prussian blue.

It developed that the sample was "Permanent Green," a paint pigment which had been sold by mistake as Paris Green.

COMPARISON OF SAMPLES BY MIXING WITH WATER AND SIEVING.

All samples received during the year were examined as to their fineness and as to whether or not they were finely ground or mixed well with water. As nearly as possible these were divided into three classes as follows: Those which were finely ground and mixed well with water, those which were not finely ground and which mixed fairly well with water and those which did not mix well with water.

Of the total number examined in this manner, 150 were found which were finely ground and mixed well with water. Of this number 108 were sifted through a No. 100 mesh sieve and in 16 cases nearly all of the sample passed through the sieve. After so treating the remaining 92 samples, the amount remaining on the sieve varied from 2 per cent. to 15 per cent.

The samples which were found to mix fairly well with water and which were not in as finely a ground condition as those in the first class, numbered 98. Of this number, 42 were sieved and the amount of sample not passing through the No. 100 mesh sieve ranged from 10 per cent. to 20 per cent.

The samples received which did not mix well with water numbered 168. Of these, 90 were sieved and from 5 per cent. to 20 per cent. in each case remained on the sieve, 16 were lumpy and in each case a large proportion of this grade did not pass a No. 60 mesh sieve.

Of the total number compared by means of the No. 100 mesh sieve, regardless of their capacity to mix well with water, the following was observed: In 16 cases nearly all of the sample passed through the sieve; in 6 cases 2 per cent. remained on the seive; in 37, 3 per cent.; in 36, 5 per cent.; in 7, 8 per cent.; in 54, 10 per cent.; in 20, 15 per cent.; in 6, 18 per cent., and in 42 samples, 20 per cent. did not pass the No. 100 mesh sieve. These results are of interest, as they show the degree of fineness to which the majority of samples were ground and also that a large proportion of the Paris green represented by the samples collected by the Bureau were not as finely ground and did not mix as well with water as they should. In the cases where the samples were lumpy, a large proportion of which would not pass the finest sieve, it will be readily seen that Paris green of this nature would not work properly in the spraying apparatus, and therefore, the full benefit of the green purchased would not be secured.

DISCUSSION OF THE RESULTS OF CHEMICAL ANALYSIS.

ARSENIC IN COMBINATION WITH COPPER, CALCULATED AS ARSENIOUS OXIDE.

The Pennsylvania Paris green law requires that Paris green sold in this State shall contain fifty per cent. of arsenic in combination with copper. In the four hundred and sixteen samples of green analyzed, the arsenious oxide in combination with copper was found to vary from 49.47 per cent. to 57.68 per cent., with an average of 55.10 per cent. Only two samples were found to contain less than the required amount of this form of arsenic.

WATER SOLUBLE ARSENIOUS OXIDE.

The law prohibits the amount of arsenic in water soluble forms which may be present in Paris green, from exceeding 3.50 per cent. The amount of water soluble arsenious oxide found present in the samples analyzed varied from 0.72 per cent. to 3.45 per cent., with an average of 1.32 per cent. None of the green examined was found to contain water soluble arsenic in excess of the amount restricted by law.

TOTAL ARSENIOUS OXIDE.

The results obtained in determining the total content of arsenious oxide showed the lowest percentage to be 51.60, the highest percentage to be 61.20, with an average of 56.61 per cent.

COPPER OXIDE.

The amount of copper, expressed as copper oxide, which was determined in the samples received, was found to range from 26.75 per cent. to 30.93 per cent., with an average of 29.55 per cent.

The results obtained by analysis of each sample, together with the Chemist's and Agent's numbers and the names and addresses of the manufacturers and dealers will be found in the following table.

The samples are grouped according to the names of the manufacturers or importers and the names of the manufacturers or importers, and the names of the dealers from whom the samples were obtained, under the name of each manufacturer or importer, are placed in the table in alphabetical order.

TABLE I.—ANALYSIS OF SAMPLES OF

Chief Chemist's Number.	Name and Address of Manufacturer or Importer.	Sampled at
P. 1007	Adler Color and Chemical Works, New York, N. Y.	Mount Pleasant, H. F. Barkley,
P. 1133	Adler Color and Chemical Works, New York, N. Y.	Bradford, Blair & Co.,
P. 1029	Adler Color and Chemical Works, New York, N. Y.	Apollo, Chas. W. Bollinger,
P. 992	Adler Color and Chemical Works, New York, N. Y.	Greensburg, S. P. Brown,
P. 1061	Adler Color and Chemical Works, New York, N. Y.	Punxsutawney, Geo. G. Burkett,
P. 974	Adler Color and Chemical Works, New York, N. Y.	Clarion, A. G. Corbett,
P. 982	Adler Color and Chemical Works, New York, N. Y.	Greenville, Davis & Alexander,
P. 999	Adler Color and Chemical Works, New York, N. Y.	Irwin, Geo. W. Fink,
P. 1018	Adler Color and Chemical Works, New York, N. Y.	Indiana, Tom E. Hildebrand,
P. 1008	Adler Color and Chemical Works, New York, N. Y.	Jeannette, R. F. Hugus,
P. 1254	Adler Color and Chemical Works, New York, N. Y.	Manheim, W. Litzenberger,
P. 944	Adler Color and Chemical Works, New York, N. Y.	Columbia, Dr. C. F. Markel,
P. 984	Adler Color and Chemical Works, New York, N. Y.	Greenville, Roy McCartaney,
P. 1317	Adler Color and Chemical Works, New York, N. Y.	New Kensington, McCullough Drug Co.,
P. 1308	Adler Color and Chemical Works, New York, N. Y.	Broookville, McKight Son & Co.,
P. 902	Adler Color and Chemical Works, New York, N. Y.	York Haven, H. O. Meads Co.,
P. 920	Adler Color and Chemical Works, New York, N. Y.	Dallastown, G. A. Myers,
P. 1315	Adler Color and Chemical Works, New York, N. Y.	New Kensington, D. A. Reeser,
P. 1076	Adler Color and Chemical Works, New York, N. Y.	Franklin, Martin W. Reisenman,
P. 1065	Adler Color and Chemical Works, New York, N. Y.	Ford City, E. J. Rihn,
P. 1021	Adler Color and Chemical Works, New York, N. Y.	Blairsville, O. A. Schrock,
P. 1058	Adler Color and Chemical Works, New York, N. Y.	DuBois, Chas. A. Schrum,
P. 981	Adler Color and Chemical Works, New York, N. Y.	Greenville, Shrom & Co.,
P. 919	Adler Color and Chemical Works, New York, N. Y.	Dallastown, V. M. Simon,
P. 908	Adler Color and Chemical Works, New York, N. Y.	Dover, Amos Swartz,
P. 1135	Adler Color and Chemical Works, New York, N. Y.	Bradford, Thompson & Wood,
P. 1279	Adler Color and Chemical Works, New York, N. Y.	Gap, I. Lewis Walker,
P. 1309	Adler Color and Chemical Works, New York, N. Y.	Mars, Chas. E. Willets,
P. 1027	Adler Color and Chemical Works, New York, N. Y.	Apollo, Frank T. Wray,
P. 968	Adler Color and Chemical Works, New York, N. Y.	Butler, Wuller Pharmacy,
		Average,
P. 938	American Druggist Syndicate, Long Island City, N. Y.	Columbia, Shroder & Hinkle,
P. 1095	A. B. Ansbacher & Co., New York, N. Y.	Corry, C. O. Babbitt & Son,

PARIS GREEN COLLECTED IN 1910.

Agent's Number.	Arsenious Oxide Combined with Copper.		Water-Soluble Arsenious Oxide.		Total arsenious oxide.	Copper oxide.	Price per pound.	Chief Chemist's Number.
	Found.	Guaranteed.	Found.	Guaranteed.				
	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Cts.	
41	56.00	50.00	0.72	3.50	56.83	30.06	40	P. 1007
167	55.59	....	1.56	....	57.18	29.81	40	P. 1133
63	55.59	50,00	1.00	3.50	56.59	29.81	40	P. 1029
26	55.59	50.00	1.00	3.50	56.62	29.81	50	P. 992
95	55.82	50.00	1.00	3.50	56.88	29.96	50	P. 1061
8	56.00	50.00	1.00	3.50	57.11	30.06	40	P. 974
16	55.40	50.00	1.48	3.50	57.06	29.71	40	P. 989
33	56.00	50.00	0.72	3.50	56.62	30.06	40	P. 999
52	55.81	50.00	1.00	3.50	56.85	29.96	40	P. 1018
37	55.59	50.00	1.00	3.50	56.65	29.81	40	P. 1003
288	55.12	50.00	1.00	3.50	56.12	29.56	28	P. 1254
44	55.70	50.00	1.00	3.50	56.40	29.87	35	P. 944
18	55.48	50.00	1.00	3.50	56.48	29.75	40	P. 981
351	54.88	55.00	1.20	3.50	56.11	29.43	50	P. 1317
337	54.08	....	1.71	....	56.05	29.00	35	P. 1308
2	53.95	50.00	1.82	3.50	55.57	28.96	30	P. 909
20	55.95	50.00	1.00	3.50	57.00	30.00	40	P. 920
349	55.59	50.00	1.00	3.50	56.55	29.81	40	P. 1315
110	55.24	50.00	1.00	3.50	56.40	29.62	35	P. 1076
99	53.78	50.00	2.45	3.50	56.58	28.84	45	P. 1065
55	55.95	50.00	1.00	3.50	56.77	30.00	50	P. 1081
92	55.35	50.00	1.59	3.50	57.00	29.68	40	P. 1063
15	55.07	50.00	1.10	3.50	56.37	29.53	40	P. 981
19	55.76	50.00	1.00	3.50	56.81	29.90	30	P. 910
8	55.70	....	1.00	....	56.81	29.87	30	P. 908
169	54.08	....	2.00	....	56.25	29.00	35	P. 1135
318	53.84	50.00	1.98	3.50	55.86	28.87	30	P. 1279
343	54.08	55.00	1.34	3.50	55.61	29.00	40	P. 1309
61	55.95	50.00	1.00	3.50	56.96	30.00	50	P. 1027
2	55.53	50.00	1.00	3.50	56.48	29.78	40	P. 968
....	55.28	....	1.22	....	56.55	29.64	39	....
88	52.74	....	2.96	....	56.55	28.28	35	P. 988
120	55.95	55.00	1.00	3.50	57.00	30.00	50	P. 1095

TABLE I.—ANALYSIS OF SAMPLES OF PARIS

Chief Chemist's Number.	Name and Address of Manufacturer or Importer.	Sampled at
P. 1300	A. B. Ansbacher & Co., New York, N. Y.	Leacock, Geo. Bard,
P. 1141	A. B. Ansbacher & Co., New York, N. Y.	Port Allegany, Bard & Cheney,
P. 1190	A. B. Ansbacher & Co., New York, N. Y.	Kutztown, W. B. Bieber,
P. 1120	A. B. Ansbacher & Co., New York, N. Y.	Johnsonburg, Harry E. Bosler,
P. 1078	A. B. Ansbacher & Co., New York, N. Y.	Franklin, R. H. Callan,
P. 1137	A. B. Ansbacher & Co., New York, N. Y.	Bradford, W. B. Callender,
P. 1278	A. B. Ansbacher & Co., New York, N. Y.	Christiana, Christiana Hardware and Supply Co.
P. 1130	A. B. Ansbacher & Co., New York, N. Y.	Warren, City Drug Store,
P. 1140	A. B. Ansbacher & Co., New York, N. Y.	Port Allegany, Gallup Hardware Co.,
P. 1235	A. B. Ansbacher & Co., New York, N. Y.	Everett, H. F. Gump & Sons,
P. 1259	A. B. Ansbacher & Co., New York, N. Y.	Lititz, C. H. Kreider,
P. 1082	A. B. Ansbacher & Co., New York and Chicago.	Cambridge Springs, Lord & Drake,
P. 1257	A. B. Ansbacher & Co., New York and Chicago.	Manheim, H. H. Martin,
P. 1285	A. B. Ansbacher & Co., New York and Chicago.	Mount Joy, G. Moyer,
P. 1128	A. B. Ansbacher & Co., New York and Chicago.	Warren, J. B. Mullen,
P. 1022	A. B. Ansbacher & Co., New York and Chicago.	Blairsville, Geo. J. New,
P. 1026	A. B. Ansbacher & Co., New York and Chicago.	Apollo, W. F. Pauly,
P. 1132	A. B. Ansbacher & Co., New York and Chicago.	Warren, The Reynolds Drug Co.,
P. 1241	A. B. Ansbacher & Co., New York and Chicago.	Elizabethtown, Jos. H. Rider & Son,
P. 1281	A. B. Ansbacher & Co., New York and Chicago.	Gap, Geo. T. Sellers,
P. 1147	A. B. Ansbacher & Co., New York and Chicago.	Lewistown, G. W. Sheary,
P. 1270	A. B. Ansbacher & Co., New York and Chicago.	New Holland, J. W. Shoowalter,
P. 1260	A. B. Ansbacher & Co., New York and Chicago.	New Holland, Wm. M. Stauffer,
P. 1122	A. B. Ansbacher & Co., New York and Chicago.	Kane, Temple Pharmacy,
P. 1265	A. B. Ansbacher & Co., New York and Chicago.	Ephrata, S. L. Weaver,
		Average,
P. 1043	Ashenbuck & Miller, Philadelphia, Pa.,	Huntingdon, Wm. M. Calvert,
P. 1301	E. J. Barry, New York, N. Y.,	Leacock, Geo. Bard,
P. 904	E. J. Barry, New York, N. Y.,	Manchester, S. S. Bare,
P. 1151	E. J. Barry, New York, N. Y.,	Palmyra, Geo. M. Baldwin,
P. 951	E. J. Barry, New York, N. Y.,	Stewartstown, A. M. Bartenslager,
P. 927	E. J. Barry, New York, N. Y.,	Wrightsville, Bernstock Bros.,
P. 1236	E. J. Barry, New York, N. Y.,	Everett, Claycomb & Whetstone,
P. 961	E. J. Barry, New York, N. Y.,	Hellam, L. R. Crumling,
P. 1231	E. J. Barry, New York, N. Y.,	Bedford, John R. Dull,
P. 914	E. J. Barry, New York, N. Y.,	Shrewsberry, Dr. C. H. Gerry,
P. 949	E. J. Barry, New York, N. Y.,	Brogueville, Grove & Uffelman,
P. 954	E. J. Barry, New York, N. Y.,	Park, Grove & Uffelman,
P. 1258	E. J. Barry, New York, N. Y.,	Manheim, W. Litzenberger,
P. 9[illegible]1	E. J. Barry, New York, N. Y.,	Dallastown, G. J. McDowell,

GREEN COLLECTED IN 1910—Continued.

Agent's Number.	Arsenious Oxide Combined with Copper.		Water-Soluble Arsenious Oxide.		Total arsenious oxide.	Copper oxide.	Price per pound.	Chief Chemist's Number.
	Found.	Guaranteed.	Found.	Guaranteed.				
	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Cts.	
334	55.01	55.00	0.98	3.50	55.99	29.50	25	P. 1300
175	55.70	55.00	1.00	3.50	56.68	29.87	40	P. 1141
224	55.82	53.00	1.00	3.50	56.99	29.98	25	P. 1190
154	55.70	55.00	1.44	3.50	58.00	29.87	40	P. 1120
107	56.24	50.00	1.00	3.50	56.94	30.15	50	P. 1073
171	55.95	....	1.00	....	56.87	30.00	40	P. 1137
312	55.82	55.00	1.20	3.50	57.89	29.98	25	P. 1278
164	55.35	....	1.00	....	56.25	29.68	40	P. 1130
174	55.59	55.00	1.20	3.50	56.37	29.81	35	P. 1140
269	55.24	55.00	1.00	3.50	56.22	29.62	40	P. 1235
293	55.59	55.00	1.00	3.50	56.81	29.81	30	P. 1259
116	57.11	55.00	1.00	3.50	57.00	30.62	30	P. 1082
291	55.35	55.00	1.00	3.50	56.35	29.68	30	P. 1257
319	55.59	55.00	1.00	3.50	56.35	29.81	30	P. 1285
162	55.95	....	1.20	....	56.56	30.00	40	P. 1128
56	56.24	55.00	1.00	3.50	56.65	30.15	40	P. 1022
60	56.34	55.00	0.85	3.50	57.08	30.21	40	P. 1026
166	55.95	....	1.00	....	56.98	30.00	40	P. 1132
275	55.95	55.00	1.34	3.50	57.37	30.00	30	P. 1241
315	55.24	55.00	1.00	3.50	56.23	29.62	28	P. 1281
181	56.17	55.00	1.00	3.50	56.68	30.12	32	P. 1147
304	56.52	55.00	0.98	3.50	57.25	30.31	30	P. 1270
303	55.35	55.00	1.00	3.50	56.28	29.68	30	P. 1269
156	54.77	....	1.32	....	56.87	29.87	35	P. 1122
299	53.95	55.00	1.71	3.50	56.16	28.98	35	P. 1265
....	55.71	....	1.09	....	56.76	29.87	35	....
77	55.35	....	1.00	....	56.47	29.68	40	P. 1043
335	54.88	....	1.00	....	56.11	29.48	25	P. 1301
4	55.85	50.00	1.00	3.50	56.29	29.68	35	P. 904
185	54.79	50.00	1.37	3.50	56.25	29.06	35	P. 1151
51	55.48	....	1.00	....	56.81	29.75	....	P. 951
27	55.40	....	1.00	....	56.48	29.71	30	P. 927
270	55.12	50.00	1.00	3.50	56.10	29.56	40	P. 1236
31	55.18	50.00	1.00	3.50	56.26	29.59	35	P. 981
265	54.19	50.00	1.47	3.50	55.73	29.06	40	P. 1231
14	54.88	50.00	1.00	3.50	55.96	29.48	35	P. 914
49	54.55	....	1.43	....	56.48	29.25	35	P. 949
54	54.71	50.00	1.30	3.50	56.16	29.34	30	P. 954
267	54.95	....	1.00	....	56.04	29.46	28	P. 1253
81	54.77	50.00	1.00	3.50	55.95	29.37	40	P. 981

TABLE I.—ANALYSIS OF SAMPLES OF PARIS

Chief Chemist's Number.	Name and Address of Manufacturer or Importer.	Sampled at
P. 1131	E. J. Barry, New York, N. Y.,	Warren, The Reynolds Drug Co.,
P. 1115	E. J. Barry, New York, N. Y.,	Ridgway, Ross Drug Co.,
P. 987	E. J. Barry, New York, N. Y.,	Cly, Cly Shelly,
P. 1248	E. J. Barry, New York, N. Y.,	Lancaster, Sprecher & Gauss,
P. 1210	E. J. Barry, New York, N. Y.,	Pottsville, L. C. Thompson,
P. 926	E. J. Barry, New York, N. Y.,	Wrightsville, G. S. Linsley,
P. 958	E. J. Barry, New York, N. Y.,	Brogueville, F. C. Uffelman,
P. 905	E. J. Barry, New York, N. Y.,	Mt. Wolf, G. H. Wolf's Sons,
		Average,
P. 1156	Lewis Berger & Sons, Ltd., London, England.	Lebanon, C. E. Boger,
P. 1268	Lewis Berger & Sons, Ltd., London, England.	New Holland, Diller Hardware Co.,
P. 1273	Lewis Berger & Sons, Ltd., London, England.	New Holland, A. B. Groff,
P. 1159	Lewis Berger & Sons, Ltd., London, England.	Lebanon, Lemberger & Co.,
P. 1294	Lewis Berger & Sons, Ltd., London, England.	Terre Hill, Marks & Moyer,
P. 1290	Lewis Berger & Sons, Ltd., London, England.	Strasburg, J. J. Messner,
P. 1247	Lewis Berger & Sons, Ltd., London, England.	Lancaster, Reilly Bros. & Raub,
P. 1298	Lewis Berger & Sons, Ltd., London, England.	Terre Hill, S. S. Watts,
		Average,
P. 1287	The Jas. A. Blanchard Co., New York, N. Y.	Everett, W. A. Alexander,
P. 1016	The Jas. A. Blanchard Co., New York, N. Y.	Indiana, Elmer W. Allison,
P. 1170	The Jas. A. Blanchard Co., New York, N. Y.	Reading, American Medicine Co.,
P. 1168	The Jas. A. Blanchard Co., New York, N. Y.	Lebanon, Frank H. Atkins,
P. 952	The Jas. A. Blanchard Co., New York, N. Y.	Stewartstown, A. M. Bartenslager,
P. 928	The Jas. A. Blanchard Co., New York, N. Y.	Wrightsville, Bernstock Bros.,
P. 1057	The Jas. A. Blanchard Co., New York, N. Y.	Du Bois, C. J. Boyle,
P. 1046	The Jas. A. Blanchard Co., New York, N. Y.	Philipsburg, W. B. Brown,
P. 948	The Jas. A. Blanchard Co., New York, N. Y.	Columbia, W. L. Bucher,
P. 1244	The Jas. A. Blanchard Co., New York, N. Y.	Elizabethtown, A. W. Cain,
P. 1216	The Jas. A. Blanchard Co., New York, N. Y.	Minersville, J. W. Clemmens,
P. 1117	The Jas. A. Blanchard Co., New York, N. Y.	Ridgway, Albert Cliffe,
P. 959	The Jas. A. Blanchard Co., New York, N. Y.	Concordville, Concordville Supply Co.,
P. 1267	The Jas. A. Blanchard Co., New York, N. Y.	Ephrata, H. L. Cox,
P. 906	The Jas. A. Blanchard Co., New York, N. Y.	Mt. Wolf, C. W. Cretchman,
P. 1276	The Jas. A. Blanchard Co., New York, N. Y.	Atglen, H. C. Davis,
P. 1051	The Jas. A. Blanchard Co., New York, N. Y.	Clearfield, C. W. Dooley & Co.,
P. 1106	The Jas. A. Blanchard Co., New York, N. Y.	Lock Haven, Richard L. Fishburne,

GREEN COLLECTED IN 1910—Continued.

Agent's Number.	Arsenious Oxide Combined with Copper.		Water-Soluble Arsenious Oxide.		Total arsenious oxide.	Copper oxide.	Price per pound.	Chief Chemist's Number.
	Found.	Guaranteed.	Found.	Guaranteed.				
	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Cts.	
165	55.59	50.00	1.00	3.50	56.68	29.81	40	P. 1131
149	54.19	50.00	1.32	3.50	56.56	29.06	40	P. 1115
37	53.95	50.00	1.43	3.50	55.90	28.98	30	P. 967
282	55.01	50.00	1.34	3.50	56.68	29.50	25	P. 1248
244	54.08	....	1.47	....	55.86	29.00	30	P. 1210
26	54.36	50.00	1.00	3.50	55.77	29.15	30	P. 926
53	55.18	....	1.00	....	56.49	29.59	....	P. 953
5	54.77	50.00	1.30	3.50	55.44	29.37	35	P. 905
....	54.83	....	1.16	....	56.19	29.39	34	....
192	53.84	....	1.20	....	55.26	28.87	36	P. 1158
302	54.66	....	1.34	....	56.22	29.31	30	P. 1268
307	55.48	....	1.71	....	57.12	29.75	30	P. 1273
193	54.77	....	1.75	....	56.68	29.37	36	P. 1159
328	54.66	....	1.20	....	56.05	29.31	30	P. 1294
324	55.48	....	1.00	....	56.35	29.75	25	P. 1290
281	55.24	....	1.20	....	56.56	29.62	35	P. 1247
332	55.59	....	1.00	....	56.35	29.81	30	P. 1298
....	54.97	....	1.30	....	56.32	29.47	32	....
271	53.95	50.00	2.20	3.00	56.61	28.98	40	P. 1237
50	51.86	....	2.81	....	56.96	27.81	35	P. 1016
204	54.77	50.00	1.00	3.00	55.75	29.37	25	P. 1170
197	53.84	50.00	1.87	3.00	56.37	28.87	30	P. 1163
58	53.73	....	1.82	....	55.77	28.81	30	P. 952
28	54.60	....	1.00	....	55.90	29.28	30	P. 928
91	56.17	53.50	1.00	2.50	56.88	30.12	40	P. 1057
80	54.42	53.50	2.21	2.50	56.84	29.18	30	P. 1046
43	54.01	53.50	1.43	2.50	55.96	28.96	35	P. 943
278	54.88	50.00	1.59	3.00	56.50	29.43	30	P. 1244
250	54.19	50.00	1.20	3.50	55.55	29.06	35	P. 1216
151	55.12	53.50	1.80	2.50	57.18	29.56	35	P. 1117
59	54.60	....	1.43	....	56.37	29.28	35	P. 959
301	53.61	50.00	2.20	3.00	56.16	28.75	35	P. 1267
6	53.61	....	1.43	....	55.31	28.75	28	P. 906
310	54.88	50.00	1.98	3.50	56.96	29.43	24	P. 1276
85	53.67	....	2.99	....	57.01	28.78	50	P. 1051
140	54.94	50.00	2.50	3.50	57.50	29.46	40	P. 1106

TABLE I.—ANALYSIS OF SAMPLES OF PARIS

Chief Chemist's Number.	Name and Address of Manufacturer or Importer.	Sampled at
P. 965	The Jas. A. Blanchard Co., New York, N. Y.	Media, J. H. Flemming,
P. 1107	The Jas. A. Blanchard Co., New York, N. Y.	Renovo, H. B. Foresman,
P. 1040	The Jas. A. Blanchard Co., New York, N. Y.	Tyrone, G. H. Garner,
P. 1181	The Jas. A. Blanchard Co., New York, N. Y.	Boyertown, O. C. Graeff,
P. 1271	The Jas. A. Blanchard Co., New York, N. Y.	New Holland, A. B. Groff,
P. 1146	The Jas. A. Blanchard Co., New York, N. Y.	Lewistown, P. M. Headings,
P. 1065	The Jas. A. Blanchard Co., New York, N. Y.	DuBois, A. P. Holland,
P. 1251	The Jas. A. Blanchard Co., New York, N. Y.	Lancaster, Geo. W. Hull,
P. 1050	The Jas. A. Blanchard Co., New York, N. Y.	Clearfield, Irwin Drug Co.,
P. 1198	The Jas. A. Blanchard Co., New York, N. Y.	Womelsdorf, F. T. Landis,
P. 1182	The Jas. A. Blanchard Co., New York, N. Y.	Boyertown, E. & J. W. Leaver,
P. 1224	The Jas. A. Blanchard Co., New York, N. Y.	Altoona, J. Ross Mateer,
P. 1108	The Jas. A. Blanchard Co., New York, N. Y.	Renovo, T. E. Mayes,
P. 1302	The Jas. A. Blanchard Co., New York, N. Y.	Brookville, McKnight Son & Co.,
P. 930	The Jas. A. Blanchard Co., New York, N. Y.	Wrightsville, M. E. Poff,
P. 1284	The Jas. A. Blanchard Co., New York, N. Y.	Gap, Harry A. Raum,
P. 1041	The Jas. A. Blanchard Co., New York, N. Y.	Huntingdon, John A. Read & Sons,
P. 1145	The Jas. A. Blanchard Co., New York, N. Y.	Lewistown, J. P. Rothermel,
P. 1186	The Jas. A. Blanchard Co., New York, N. Y.	Kutztown, N. S. Schmehl,
P. 956	The Jas. A. Blanchard Co., New York, N. Y.	Swarthmore, Victor D. Shirer,
P. 1193	The Jas. A. Blanchard Co., New York, N. Y.	Birdsboro, John W. Slipp,
P. 1042	The Jas. A. Blanchard Co., New York, N. Y.	Huntingdon, H. E. Steel,
P. 1043	The Jas. A. Blanchard Co., New York, N. Y.	St. Marys, St. Marys Drug Store,
P. 940	The Jas. A. Blanhcard Co., New York, N. Y.	Columbia, C. R. Strickler,
P. 1110	The Jas. A. Blanchard Co., New York, N. Y.	Emporium, Geo. O. Taggart,
P. 1048	The Jas. A. Blanchard Co., New York, N. Y.	Philipsburg, G. F. Troutman & Co.,
P. 1291	The Jas. A. Blanchard Co., New York, N. Y.	Strasburg, J. G. Weaver,
P. 925	The Jas. A. Blanchard Co., New York, N. Y.	Wrightsville, Harry Wood,
P. 1054	The Jas. A. Blanchard Co., New York, N. Y.	Clearfield, Woodward & Brenner,
P. 924	The Jas. A. Blanchard Co., New York, N. Y.	Dallastown, M. L. Zeigler,
P. 1097	The Jas. A. Blanchard Co., New York, N. Y.	Bellefonte, Zeller & Son,
		Average,
P. 1191	Bright & Co., Reading, Pa.,	Birdsboro, F. W. Focht & J. B. Lacy, Jr.,

GREEN COLLECTED IN 1910—Continued.

Agent's Number.	Arsenious Oxide Combined with Copper.		Water-Soluble Arsenious Oxide.		Total arsenious oxide.	Copper oxide.	Price per pound.	Chief Chemist's Number.
	Found.	Guaranteed.	Found.	Guaranteed.				
	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Cts.	
65	55.81	------------	1.00	------------	56.87	29.93	35	P. 965
141	51.86	------------	1.44	------------	61.90	27.81	45	P. 1107
74	53.61	------------	2.72	------------	56.47	28.75	40	P. 1040
215	54.55	------------	1.00	------------	55.75	29.25	30	P. 1181
305	53.73	50.00	1.71	3.00	57.20	28.81	30	P. 1271
180	54.77	50.00	1.62	3.00	56.50	29.37	35	P. 1146
89	54.55	------------	1.59	------------	56.22	29.25	50	P. 1055
285	54.42	50.00	1.83	3.50	56.74	29.18	25	P. 1251
84	51.22	------------	2.81	------------	60.76	27.46	40	P. 1050
232	53.84	50.00	2.45	3.00	56.87	28.87	25	P. 1198
216	54.55	50.00	1.00	3.50	55.62	29.25	25	P. 1182
258	53.26	50.00	1.47	3.00	55.73	28.56	50	P. 1224
142	55.40	------------	1.68	------------	57.68	29.71	40	P. 1108
336	51.86	------------	1.71	------------	57.58	27.81	35	P. 1302
30	53.73	------------	1.30	------------	55.44	28.81	30	P. 930
318	54.08	50.00	1.71	3.00	55.92	29.00	40	P. 1284
75	55.59	50.00	1.20	3.00	56.90	29.81	40	P. 1041
179	54.55	50.00	1.62	3.00	56.43	29.25	35	P. 1145
220	54.77	53.50	1.72	2.50	56.87	29.37	21	P. 1186
56	55.95	53.00	1.00	2.50	56.37	30.00	35	P. 956
227	54.42	50.00	2.08	3.00	57.29	29.18	30	P. 1193
76	54.88	53.50	2.21	2.50	57.08	29.43	40	P. 1042
146	53.20	------------	1.56	------------	56.75	28.53	40	P. 1112
40	52.14	------------	2.66	------------	56.55	27.96	35	P. 940
144	55.53	53.50	1.44	2.50	57.48	29.78	30	P. 1110
82	55.01	------------	1.59	------------	57.14	29.50	40	P. 1048
325	54.30	50.00	1.71	3.00	56.17	29.12	25	P. 1291
25	53.67	------------	1.43	------------	55.68	28.78	40	P. 925
88	55.53	53.50	1.96	2.50	57.33	29.73	40	P. 1054
24	53.89	------------	1.30	------------	55.63	28.90	30	P. 924
131	56.22	------------	1.00	------------	57.00	30.15	40	P. 1097
--------	54.24	------------	1.71	------------	56.71	29.09	35	----------
225	55.95	------------	1.00	------------	56.87	30.00	25	P. 1191

TABLE I.—ANALYSIS OF SAMPLES OF PARIS

Chief Chemist's Number.	Name and Address of Manufacturer or Importer.	Sampled at
P. 1239	F. W. Devoe & C. T. Raynolds Co., New York, N. Y.	Elizabethtown, Geo. D. Boggs & Son,
P. 1197	F. W. Devoe & C. T. Raynolds Co., New York, N. Y.	Womelsdorf, L. S. Filbert,
P. 1200	F. W. Devoe & C. T. Raynolds Co., New York, N. Y.	Robesonia, Thomas Filbert,
P. 1201	F. W. Devoe & C. T. Raynolds Co., New York, N. Y.	Robesonia, Gerhart & Moyer,
P. 1262	F. W. Devoe & C. T. Raynolds Co., New York, N. Y.	Adamstown, S. K. Heffley,
P. 1202	F. W. Devoe & C. T. Raynolds Co., New York, N. Y.	Wernersville, John I. Miller,
P. 1208	F. W. Devoe & C. T. Raynolds Co., New York, N. Y.	Sinking Springs, Levi S. Miller,
P. 1173	F. W. Devoe & C. T. Raynolds Co., New York, N. Y.	Reading, John H. Obold & Co.,
P. 1144	F. W. Devoe & C. T. Raynolds Co., New York, N. Y.	Lewistown, J. B. Selheimer,
P. 1156	F. W. Devoe & C. T. Raynolds Co., New York, N. Y.	Annville, John S. Shope,
P. 1116	F. W. Devoe & C. T. Raynolds Co., New York, N. Y.	Ridgway, Smith Bros. Co.,
P. 1260	F. W. Devoe & C. T. Raynolds Co., New York, N. Y.	Adamstown, H. F. Snader & Co.,
P. 1195	F. W. Devoe & C. T. Raynolds Co., New York, N. Y.	Birdsboro, W. O. Steward,
P. 1264	F. W. Devoe & C. T. Raynolds Co., New York, N. Y.	Ephrata, S. L. Weaver,
		Average,
P. 1105	Felton, Sibley & Co., Philadelphia, Pa.	Lock Haven, A. C. Candor & Co.,
P. 1228	Felton, Sibley & Co., Philadelphia, Pa.	Altoona, D. B. Dougherty & Son,
P. 1184	Felton, Sibley & Co., Philadelphia, Pa.	Boyertown, G. P. Rahn,
P. 1177	Felton, Sibley & Co., Philadelphia, Pa.	Hamburg, Walter M. Raubenhold & Son,
P. 1219	Felton, Sibley & Co., Philadelphia, Pa.	Minersville, The F. W. Sanner Hardware Co.,
P. 963	Felton, Sibley & Co., Philadelphia, Pa.	Media, Henry C. Snowden, Jr.,
		Average,
P. 913	Harshburg & Hollander, Baltimore, Md.	Shrewsberry, Geo. P. Everhart,
P. 1179	Morris Herrmann & Co., New York, N. Y.	Hamburg, J. L. Balthaser,
P. 950	Morris Herrmann & Co., New York, N. Y.	Stewartstown, A. W. Bartenslager,
P. 1044	Morris Herrmann & Co., New York, N. Y.	Huntingdon, Black & Co.,
P. 1238	Morris Herrmann & Co., New York, N. Y.	Elizabethtown, Geo. D. Boggs & Son,
P. 1205	Morris Herrmann & Co., New York, N. Y.	Wernersville, D. H. Bortz,
P. 1209	Morris Herrmann & Co., New York, N. Y.	Pottsville, Bright & Co.,
P. 1277	Morris Herrmann & Co., New York, N. Y.	Christiana, Christiana Hardware and Supply Co.
P. 960	Morris Herrmann & Co., New York, N. Y.	Concordville, Cloud & Green,
P. 1255	Morris Herrmann & Co., New York, N. Y.	Manheim, Geo. H. Danner & Co.,
P. 1166	Morris Herrmann & Co., New York, N. Y.	Myerstown, H. S. Davis,

GREEN COLLECTED IN 1910—Continued.

Agent's Number.	Arsenious Oxide Combined with Copper.		Water-Soluble Arsenious Oxide.		Total arsenious oxide.	Copper oxide.	Price per pound.	Chief Chemist's Number.
	Found.	Guaranteed.	Found.	Guaranteed.				
	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Cts.	
273	54.77	56.00	1.71	2.00	56.68	29.37	30	P. 1239
231	55.35	56.00	1.00	2.00	56.42	29.68	28	P. 1191
234	54.88	57.00	1.42	3.50	56.31	29.43	25	P. 1200
235	54.88	57.00	1.59	3.50	56.43	29.43	25	P. 1201
296	55.35	57.00	1.98	3.50	57.37	29.68	28	P. 1262
236	55.35	56.00	0.98	2.00	56.25	29.68	25	P. 1202
242	55.35	56.00	1.00	2.00	56.25	29.68	25	P. 1208
207	55.70	50.00	1.00	3.50	55.87	29.87	25	P. 1173
178	55.35	56.00	1.00	2.00	56.25	29.65	35	P. 1144
190	55.48	57.00	1.20	3.50	57.56	29.75	30	P. 1156
150	54.83	57.00	1.44	3.50	56.87	29.40	40	P. 1116
294	55.01	56.00	1.34	2.00	56.68	29.50	25	P. 1260
229	55.82	57.00	1.00	3.50	56.99	29.93	25	P. 1195
298	55.01	57.00	1.98	3.50	57.68	29.50	35	P. 1264
....	55.22	....	1.33	....	56.69	29.61	29	....
139	55.48	50.00	1.30	3.50	57.48	29.75	40	P. 1105
262	54.19	50.00	1.47	3.50	55.73	29.06	35	P. 1223
218	54.77	....	1.72	....	56.75	29.37	30	P. 1184
211	53.73	50.00	1.00	3.50	54.86	28.81	25	P. 1177
253	54.77	50.00	1.00	3.50	55.78	29.37	30	P. 1219
68	54.60	50.00	1.32	3.50	56.82	29.28	27	P. 963
....	54.59	....	1.47	....	56.23	29.27	31	....
13	54.66	....	1.30	....	56.14	29.31	30	P. 913
218	55.95	50.00	0.85	3.50	56.75	30.00	25	P. 1179
50	55.70	50.00	1.00	3.50	56.87	29.87	30	P. 950
78	55.48	50.00	1.00	3.50	56.53	29.75	40	P. 1044
272	55.70	50.00	0.85	3.50	56.35	29.87	30	P. 1238
239	55.48	....	1.00	....	56.55	29.75	25	P. 1206
243	55.59	50.00	1.00	3.50	56.75	29.81	25	P. 1209
311	56.17	50.00	1.20	3.50	57.88	30.12	25	P. 1277
60	56.17	50.00	1.00	3.50	56.55	30.12	25	P. 960
289	55.35	50.00	1.00	3.50	56.35	29.68	25	P. 1255
300	54.77	50.00	1.50	3.50	56.50	29.37	30	P. 1166

TABLE I.—ANALYSIS OF SAMPLES OF PARIS

Chief Chemist's Number.	Name and Address of Manufacturer or Importer.	Sampled at
P. 1221	Morris Herrmann & Co., New York, N. Y.	St. Clair, H. B. Davis,
P. 1213	Morris Herrmann & Co., New York, N. Y.	Schuylkill Haven, W. J. Downs,
P. 1081	Morris Herrmann & Co., New York, N. Y.	Cambridge Springs, J. W. Drake,
P. 1152	Morris Herrmann & Co., New York, N. Y.	Palmyra, S. F. Engle,
P. 1243	Morris Herrmann & Co., New York, N. Y.	Elizabethtown, Geo. A. Fisher,
P. 903	Morris Herrmann & Co., New York, N. Y.	Manchester, S. R. Flurer,
P. 1261	Morris Herrmann & Co., New York, N. Y.	Adamstown, Chas. H. Gehman & Co.,
P. 947	Morris Herrmann & Co., New York, N. Y.	Felton, C. T. Grove,
P. 1204	Morris Herrmann & Co., New York, N. Y.	Wernersville, E. S. Hassler,
P. 1056	Morris Herrmann & Co., New York, N. Y.	Du Bois, C. L. Hay,
P. 1263	Morris Herrmann & Co., New York, N. Y.	Adamstown, S. K. Heffley,
P. 929	Morris Herrmann & Co., New York, N. Y.	Wrightsville, Heppenstall Bros. & Co.,
P. 1206	Morris Herrmann & Co., New York, N. Y.	Sinking Springs, C. B. Hull,
P. 1047	Morris Herrmann & Co., New York, N. Y.	Philipsburg, Jones & Co.,
P. 1189	Morris Herrmann & Co., New York, N. Y.	Kutztown, O. W. Keiter,
P. 962	Morris Herrmann & Co. N,we York, N. Y.	Lenni Mills, C. L. La Shelle,
P. 1183	Morris Herrmann & Co., New York, N. Y.	Boyertown, E. & J. W. Leaver,
P. 1180	Morris Herrmann & Co., New York, N. Y.	Boyertown, Irene Mayer,
P. 1194	Morris Herrmann & Co., New York, N. Y.	Birdsboro, Miller Bros.,
P. 1245	Morris Herrmann & Co., New York, N. Y.	Lancaster, Miller Drug Co.,
P. 1299	Morris Herrmann & Co., New York, N. Y.	Leola, P. H. Meckley,
P. 1199	Morris Herrmann & Co., New York, N. Y.	Womelsdorf, W. M. S. Moore,
P. 1098	Morris Herrmann & Co., New York, N. Y.	Bellefonte, C. M. Parrish,
P. 1211	Morris Herrmann & Co., New York, N. Y.	Pottsville, The Pottsville Supply Co.,
P. 1296	Morris Herrmann & Co., New York, N. Y.	Terre Hill, Wm. R. Redcay,
P. 1292	Morris Herrmann & Co., New York, N. Y.	Strasburg, J. M. Rowe,
P. 1187	Morris Herrmann & Co., New York, N. Y.	Kutztown, E. J. Sellers,
P. 1282	Morris Herrmann & Co., New York, N. Y.	Gap, Geo. T. Sellers,
P. 934	Morris Herrmann & Co., New York, N. Y.	Seven Valleys, H. L. Shive,
P. 1192	Morris Herrmann & Co., New York, N. Y.	Birdsboro, John W. Slipp,
P. 910	Morris Herrmann & Co., New York, N. Y.	Dover, C. W. Spangler,
P. 1250	Morris Herrmann & Co., New York, N. Y.	Lancaster, Steinman Hardware Co.,
P. 911	Morris Herrmann & Co., New York, N. Y.	New Freedom, H. A. Stover,

GREEN COLLECTED IN 1910—Continued.

Agent's Number.	Arsenious Oxide Combined with Copper.		Water-Soluble Arsenious Oxide.		Total arsenious oxide.	Copper oxide.	Price per pound.	Chief Chemist's Number.
	Found.	Guaranteed.	Found.	Guaranteed.				
	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Cts.	
255	55.01	50.00	0.85	3.50	55.85	29.50	30	P. 1221
247	55.95	50.00	1.00	3.50	56.69	30.00	35	P. 1213
115	56.22	50.00	1.00	3.50	57.36	30.15	35	P. 1081
186	55.59	50.00	1.00	3.50	56.68	29.81	25	P. 1152
277	56.41	50.00	0.85	3.50	56.93	30.25	30	P. 1243
8	55.65	50.00	1.00	3.50	56.48	29.84	35	P. 903
295	55.70	50.00	1.00	3.50	57.12	29.87	25	P. 1261
47	56.11	50.00	1.00	3.50	56.81	30.09	30	P. 947
238	55.48	50.00	0.85	3.50	56.25	29.75	25	P. 1204
90	55.59	50.00	1.10	3.50	56.76	29.81	35	P. 1056
297	54.19	50.00	1.98	3.50	57.68	29.06	28	P. 1263
29	55.24	50.00	1.00	3.50	55.96	29.62	40	P. 929
240	55.59	50.00	1.00	3.50	56.43	29.81	25	P. 1206
81	55.24	50.00	1.34	3.50	56.77	29.62	40	P. 1047
223	56.28	50.00	1.20	3.50	57.65	30.18	25	P. 1189
62	55.48	50.00	1.00	3.50	56.55	29.75	30	P. 962
217	55.59	50.00	1.00	3.50	56.75	29.81	25	P. 1183
214	55.82	....	1.00	....	56.69	29.98	35	P. 1180
228	55.82	50.00	1.00	3.50	56.87	29.98	28	P. 1194
279	56.52	50.00	0.98	3.50	57.31	30.31	35	P. 1245
333	54.88	50.00	1.00	3.50	55.93	29.43	30	P. 1299
233	55.01	50.00	1.42	3.50	56.69	29.50	25	P. 1199
132	56.11	50.00	1.00	3.50	57.12	30.09	40	P. 1098
245	55.65	50.00	1.00	3.50	56.87	29.84	35	P. 1211
330	54.95	50.00	1.00	3.50	55.92	29.46	30	P. 1296
326	55.59	50.00	0.98	3.50	55.48	29.81	25	P. 1292
221	55.01	50.00	1.42	3.50	56.99	29.50	30	P. 1187
316	55.35	50.00	1.00	3.50	56.11	29.68	28	P. 1282
34	56.06	50.00	1.00	3.50	57.13	30.06	30	P. 984
226	54.08	50.00	2.20	3.50	57.17	29.00	30	P. 1192
10	55.81	50.00	1.00	3.50	56.81	29.98	30	P. 910
284	56.17	50.00	0.85	3.50	56.99	30.12	25	P. 1250
11	55.95	50.00	1.00	3.50	56.94	30.00	30	P. 911

TABLE I.—ANALYSIS OF SAMPLES OF PARIS

Chief Chemist's Number.	Name and Address of Manufacturer or Importer.	Sampled at
P. 941	Morris Herrmann & Co., New York, N. Y.	Columbia, C. R. Strickler,
P. 1212	Morris Herrmann & Co., New York, N. Y.	Pottsville, Swalm Hardware Co.,
P. 1222	Morris Herrmann & Co., New York, N. Y.	St. Clair, G. B. Wagner,
P. 1172	Morris Herrmann & Co., New York, N. Y.	Reading, J. H. Weber,
P. 1052	Morris Herrmann & Co., New York, N. Y.	Clearfield, W. L. Wilson,
P. 936	Morris Herrmann & Co., New York, N. Y.	Goldsboro, E. L. Yinger,
P. 922	Morris Herrmann & Co., New York, N. Y.	Dallastown, M. L. Zeigler,
		Average,
P. 946	Lancaster Drug Co., Lancaster, Pa.,	Mountville, T. S. Shookers,
P. 1094	Fred. L. Lavanburg, New York, N. Y.	Corry, C. O. Babbitt & Son,
P. 1148	Fred. L. Lavanburg, New York, N. Y.	Mifflintown, L. Banks & Co.,
P. 1006	Fred. L. Lavanburg, New York, N. Y.	Mount Pleasant, H. F. Barkley,
P. 957	Fred. L. Lavanburg, New York, N. Y.	Swarthmore, W. S. Bittle,
P. 1039	Fred. L. Lavanburg, New York, N. Y.	Tyrone, Guido C. Boecking,
P. 1045	Fred. L. Lavanburg, New York, N. Y.	Bellwood, Boecking & Meredith,
P. 1119	Fred. L. Lavanburg, New York, N. Y.	Johnsonburg, Harry E. Bosler,
P. 1032	Fred. L. Lavanburg, New York, N. Y.	Leechburg, M. Brechbill,
P. 1034	Fred. L. Lavanburg, New York, N. Y.	Leechburg, W. M. Buchholz,
P. 1113	Fred. L. Lavanburg, New York, N. Y.	St. Marys, Central Drug Co.,
P. 1008	Fred. L. Lavanburg, New York, N. Y.	Mount Pleasant, C. F. Coldsmith,
P. 1014	Fred. L. Lavanburg, New York, N. Y.	Indiana, Daugherty Bros.,
P. 977	Fred. L. Lavanburg, New York, N. Y.	Grove City, G. W. De France,
P. 1240	Fred. L. Lavanburg, New York, N. Y.	Elizabethtown, Chas. B. Dierolf,
P. 973	Fred. L. Lavanburg, New York, N. Y.	Clarion, Ditz & Mooney Hardware Co.,
P. 1143	Fred. L. Lavanburg, New York, N. Y.	Lewistown, E. S. Eby,
P. 1109	Fred. L. Lavanburg, New York, N. Y.	Emporium, Emporium Drug Co.,
P. 1153	Fred. L. Lavanburg, New York, N. Y.	Palmyra, S. F. Engle,
P. 1252	Fred. L. Lavanburg, New York, N. Y.	Manheim, S. Chas. Ensminger,
P. 1011	Fred. L. Lavanburg, New York, N. Y.	Scottdale, J. C. Evans,
P. 1100	Fred. L. Lavanburg, New York, N. Y.	Bellefonte, Green's Pharmacy,
P. 1272	Fred. L. Lavanburg, New York, N. Y.	New Holland, A. B. Groff,
P. 1149	Fred. L. Lavanburg, New York, N. Y.	Mifflintown, E. M. Guss & Sons,
P. 1232	Fred. L. Lavanburg, New York, N. Y.	Bedford, F. W. Jordan,
P. 1225	Fred. L. Lavanburg, New York, N. Y.	Altoona, Kantner's Drug Store,
P. 1311	Fred. L. Lavanburg, New York, N. Y	Mars, P. L. Kerr & Son,
P. 1167	Fred. L. Lavanburg, New York, N. Y.	Myerstown, W. C. Kline,
P. 1099	Fred. L. Lavanburg, New York, N. Y.	Bellefonte, Sidney Krumrine,
P. 1293	Fred. L. Lavanburg, New York, N. Y.	Strasburg, J. H. Long,
P. 1023	Fred. L. Lavanburg, New York, N. Y.	Saltsburg, Joe A. McClaran,
P. 1063	Fred. L. Lavanburg, New York, N. Y.	Ford City, McClelland Bros.,
P. 1316	Fred. L. Lavanburg, New York, N. Y.	New Kensington, McCulloch Drug Co.,
P. 1280	Fred. L. Lavanburg, New York, N. Y.	Gap, J. C. Marsh,
P. 1101	Fred. L. Lavanburg, New York, N. Y.	Lock Haven, Geo. W. Mason,
P. 1161	Fred. L. Lavanburg, New York, N. Y.	Lebanon, W. B. Means,
P. 1289	Fred. L. Lavanburg, New York, N. Y.	Strasburg, J. J. Messner,
P. 893	Fred. L. Lavanburg, New York, N. Y.	Greensburg, D. A. Miller,
P. 1019	Fred. L. Lavanburg, New York, N. Y.	Indiana, Clark Neal,
P. 1287	Fred. L. Lavanburg, New York, N. Y.	Mount Joy, H. S. Newcomer,
P. 1126	Fred. L. Lavanburg, New York, N. Y.	Warren, Newell & Gaughn,
P. 1150	Fred. L. Lavanburg, New York, N. Y.	Palmyra, A. C. Ober,
P. 1031	Fred. L. Lavanburg, New York, N. Y.	Leechburg, John H. Parks,
P. 1229	Fred. L. Lavanburg, New York, N. Y.	Altoona, Philadelphia Medicine Co.,
P. 967	Fred. L. Lavanburg, New York, N. Y.	Butler, Purvis Pharmacy,
P. 1138	Fred. L. Lavanburg, New York, N. Y.	Bradford, J. L. Radebaugh,
P. 1242	Fred. L. Lavanburg, New York, N. Y.	Elizabethtown, Jos. H. Rider & Son,
P. 1114	Fred. L. Lavanburg, New York, N. Y.	Ridgway, Ross Drug Co.,
P. 1256	Fred. L. Lavanburg, New York, N. Y.	Manheim, H. F. Ruhl,
P. 1175	Fred. L. Lavanburg, New York, N. Y.	Hamburg, Chas. C. Schomo,

GREEN COLLECTED IN 1910—Continued.

Agent's Number.	Arsenious Oxide Combined with Copper.		Water-Soluble Arsenious Oxide.		Total arsenious oxide.	Copper oxide.	Price per pound.	Chief Chemist's Number.
	Found.	Guaranteed.	Found.	Guaranteed.				
	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Cts.	
41	55.35	50.00	1.00	3.50	56.48	29.68	35	P. 941
246	55.82	----------	1.00	----------	56.75	29.93	25	P. 1212
256	53.61	50.00	1.59	3.50	55.73	28.75	40	P. 1222
206	54.55	50.00	1.13	3.50	55.87	29.25	35	P. 1172
86	55.40	50.00	1.34	3.50	56.84	29.71	40	P. 1052
36	55.81	50.00	1.00	3.50	56.06	29.93	30	P. 936
22	55.48	50.00	1.00	3.50	56.48	29.75	30	P. 922
-------	55.53	----------	1.09	----------	56.67	29.78	30	----------
46	49.47	----------	3.45	----------	55.56	26.53	40	P. 946
128	55.53	----------	1.34	----------	57.00	29.78	50	P. 1094
182	55.48	50.00	1.00	3.50	56.43	29.75	30	P. 1148
40	55.48	50.00	1.48	3.50	57.44	29.75	50	P. 1006
57	53.44	56.00	2.66	2.50	56.55	28.65	30	P. 957
73	54.77	----------	1.83	----------	56.77	29.37	40	P. 1039
79	55.95	----------	1.00	----------	56.96	30.00	40	P. 1045
153	54.60	50.00	1.68	3.50	57.68	29.28	40	P. 1119
66	53.48	----------	2.21	----------	57.33	28.68	35	P. 1032
68	54.42	50.00	1.47	3.50	58.43	29.18	40	P. 1034
147	55.53	50.00	1.44	3.50	57.00	29.78	50	P. 1113
42	55.12	50.00	1.24	3.50	56.77	29.56	50	P. 1008
48	55.35	----------	1.72	----------	57.63	29.68	40	P. 1014
11	55.70	50.00	1.48	3.50	57.48	29.87	40	P. 977
274	54.55	50.00	1.34	3.50	57.18	29.25	35	P. 1240
7	55.59	----------	1.10	----------	56.81	29.81	35	P. 973
177	54.88	----------	1.41	----------	56.56	29.43	40	P. 1143
143	55.35	50.00	1.80	3.50	57.50	29.68	50	P. 1109
187	54.30	50.00	1.62	3.50	56.56	29.12	25	P. 1153
286	55.35	50.00	1.20	3.50	58.12	29.68	30	P. 1252
45	55.24	50.00	1.00	3.50	56.32	29.62	35	P. 1011
134	55.40	----------	1.20	----------	56.58	29.71	40	P. 1100
306	55.01	50.00	1.83	3.50	57.20	29.50	30	P. 1272
183	55.48	50.00	1.00	3.50	56.56	29.75	30	P. 1149
266	54.19	50.00	1.59	3.50	55.98	29.06	40	P. 1232
259	53.73	50.00	1.47	3.50	55.61	28.81	25	P. 1225
345	54.66	50.00	1.34	3.50	56.05	29.30	40	P. 1311
201	54.77	50.00	1.00	3.50	55.75	29.37	30	P. 1167
133	55.48	50.00	1.44	3.50	57.48	29,75	35	P. 1099
327	54.95	50.00	1.20	3.50	56.29	29.46	25	P. 1293
57	55.35	----------	1.00	----------	56.28	29.68	35	P. 1023
97	54.19	50.00	2.45	3.50	51.60	29.06	40	P. 1063
350	55.24	50.00	1.59	3.50	57.21	29.62	50	P. 1316
314	54.42	50.00	1.59	3.50	56.11	29.18	28	P. 1280
135	55.07	50.00	1.32	3.50	57.06	29.53	40	P. 1101
195	58.73	----------	1.87	----------	56.50	28.81	----------	P. 1161
323	55.35	50.00	1.00	3.50	56.20	29.68	25	P. 1289
27	55.95	50.00	1.20	3.50	57.42	30.00	50	P. 998
58	55.95	----------	1.00	----------	56.90	30.00	35	P. 1019
321	54.19	50.00	2.20	3.50	58.37	29.06	35	P. 1287
160	54.19	50.00	1.87	3.50	57.73	29.06	30	P. 1126
184	55.35	50.00	1.37	3.50	56.75	29.68	30	P. 1150
65	53.02	----------	1.96	----------	57.21	28.43	50	P. 1081
263	54.66	----------	1.00	----------	55.85	29.31	35	P. 1229
1	55.35	50.00	2.00	3.50	57.30	29.68	40	P. 967
172	54.77	50.00	1.75	3.50	57.50	29.37	30	P. 1138
276	55.95	50.00	1.20	3.50	57.43	30.00	30	P. 1242
148	54.35	50.00	1.32	3.50	59.70	29.14	40	P. 1114
290	55.24	50.00	1.20	3.50	56.96	29.62	28	P. 1256
209	53.61	50.00	1.59	3.50	57.65	28.75	25	P. 1175

TABLE I.—ANALYSIS OF SAMPLES OF PARIS

Chief Chemist's Number.	Name and Address of Manufacturer or Importer.	Sampled at
P. 915	Fred. L. Lavanburg, New York, N. Y.	Glen Rock, J. E. Seitz,
P. 955	Fred. L. Lavanburg, New York, N. Y.	Swarthmore, Charles A. Smith,
P. 1038	Fred. L. Lavanburg, New York, N. Y.	Tyrone, O. A. Steel,
P. 990	Fred. L. Lavanburg, New York, N. Y.	Greensburg, Stephenson Chemical Co.,
P. 996	Fred. L. Lavanburg, New York, N. Y.	Greensburg, Harry Thomas,
P. 1028	Fred. L. Lavanburg, New York, N. Y.	Apollo, Frank T. Wray,
P. 932	Fred. L. Lavanburg, New York, N. Y.	Hellam, Zerfoss & Leifhart,
		Average,
P. 1093	Leggett & Bro., New York, N. Y.,	Corry, N. F. Ames & Co.,
P. 1096	Leggett & Bro., New York, N. Y.,	Corry, Thomas Downly,
P. 1136	Leggett & Bro., New York, N. Y.,	Bradford, W. D. Hart,
P. 1249	Leggett & Bro., New York, N. Y.,	Lancaster, J. C. Houghton & Son,
P. 1160	Leggett & Bro., New York, N. Y.,	Lebanon, Lemberger & Co.,
P. 1134	Leggett & Bro., New York, N. Y.,	Bradford, W. O. Neely,
P. 1088	Leggett & Bro., New York, N. Y.,	Erie, B. A. Smith,
P. 1084	Leggett & Bro., New York, N. Y.,	Edinboro, Thos. Steadman,
P. 1142	Leggett & Bro., New York, N. Y.,	Port Allegany, Studholme Bros.,
P. 1087	Leggett & Bro., New York, N. Y.,	North East, Whitehill & Co.,
		Average,
P. 1217	Lehn & Fink, New York, N. Y.,	Minersville, Chas. J. Klitsch,
P. 1176	Lehn & Fink, New York, N. Y.,	Hamburg, Chas. C. Schome,
P. 997	Lehn & Fink, New York, N. Y.,	Greensburg, Harry Thomas,
		Average,
P. 912	John Lucas & Co., Philadelphia, Pa.,	New Freedom, J. D. Bailey,
P. 1258	John Lucas & Co., Philadelphia, Pa.,	Litiz, A. R. Bomberger,
P. 1286	John Lucas & Co., Philadelphia, Pa.,	Mount Joy, John H. Buohl,
P. 909	John Lucas & Co., Philadelphia, Pa.,	Dover, G. H. Daron,
P. 1207	John Lucas & Co., Philadelphia, Pa.,	Sinking Springs, C. W. Freeman,
P. 933	John Lucas & Co., Philadelphia, Pa.,	Hellam, Gable & Gilbert,
P. 1203	John Lucas & Co., Philadelphia, Pa.,	Wernersville, E. S. Hassler,
P. 1102	John Lucas & Co., Philadelphia, Pa.,	Lock Haven, Hilton & Heffner,
P. 1168	John Lucas & Co., Philadelphia, Pa.,	Reading, Hoff & Bro.,
P. 1164	John Lucas & Co., Philadelphia, Pa.,	Lebanon, Lebanon Hardware Co.,
P. 917	John Lucas & Co., Philadelphia, Pa.,	Dallastown, Edward Leifhart,
P. 1125	John Lucas & Co., Philadelphia, Pa.,	Kane, J. D. Magowan,
P. 1274	John Lucas & Co., Philadelphia, Pa.,	New Holland, Eli M. Martin,
P. 1288	John Lucas & Co., Philadelphia, Pa.,	Mount Joy, H. S. Newcomer,
P. 1104	John Lucas & Co., Philadelphia, Pa.,	Lock Haven, Dr. A. Prieson Co.,
P. 1283	John Lucas & Co., Philadelphia, Pa.,	Gap, Harry A. Raum,
P. 1155	John Lucas & Co., Philadelphia, Pa.,	Annville, U. S. Seabold,
P. 918	John Lucas & Co., Philadelphia, Pa.,	Dallastown, V. M. Simon,
P. 1266	John Lucas & Co., Philadelphia, Pa.,	Ephrata, I. G. Sprecher's Sons,
P. 907	John Lucas & Co., Philadelphia, Pa.,	Dover, Amos Swartz,
P. 935	John Lucas & Co., Philadelphia, Pa.,	Goldsboro, E. L. Yinger,
P. 923	John Lucas & Co., Philadelphia, Pa.,	Dallastown, M. L. Ziegler,
		Average,
P. 1178	I. Pfeiffer, New York, N. Y.,	Hamburg, W. S. Adams,
P. 988	I. Pfeiffer, New York, N. Y.,	Freeport, Beynard, Way Co.,
P. 1033	I. Pfeiffer, New York, N. Y.,	Leechburg, M. Brechbill,
P. 991	I. Pfeiffer, New York, N. Y.	Greensburg, S. B. Brown,
P. 1035	I. Pfeiffer, New York, N. Y.,	Leechburg, W. M. Buchholz,
P. 975	I. Pfeiffer, New York, N. Y.,	Clarion, J. C. Campbell,
P. 1075	I. Pfeiffer, New York, N. Y.,	Franklin, G. H. Curtis,
P. 1015	I. Pfeiffer, New York, N. Y.,	Indiana, Daugherty Bros.,
P. 1067	I. Pfeiffer, New York, N. Y.,	Kittanning, H. S. Dershimer,
P. 1111	I. Pfeiffer, New York, N. Y.,	Emporium, R. O. Dodson,
P. 1077	I. Pfeiffer, New York, N. Y.,	Meadville, F. K. Easterwood,
P. 1060	I. Pfeiffer, New York, N. Y.,	Punxsutawney, O. M. Feicht,
P. 1036	I. Pfeiffer, New York, N. Y.,	Vandergrift, H. L. Ferree,

GREEN COLLECTED IN 1910—Continued.

Agent's Number.	Arsenious Oxide Combined with Copper.		Water-Soluble Arsenious Oxide.		Total arsenious oxide.	Copper oxide.	Price per pound.	Chief Chemist's Number.
	Found.	Guaranteed.	Found.	Guaranteed.				
	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Cts.	
15	55.24	50.00	1.82	3.50	57.33	29.62	30	P. 915
55	54.14	50.00	1.43	3.50	56.87	29.08	25	P. 955
72	54.31	....	1.59	....	56.84	29.12	30	P. 1038
24	55.65	50.00	1.72	3.50	57.48	29.84	50	P. 990
30	55.76	50.00	1.00	3.50	56.81	29.90	40	P. 996
62	55.48	50.00	1.83	3.50	57.57	29.75	50	P. 1028
32	56.17	....	1.00	....	57.13	30.12	30	P. 932
....	54.94	....	1.48	....	56.93	29.46	36	....
127	55.40	50.00	1.00	3.50	56.52	29.71	40	P. 1093
130	55.40	50.00	1.00	3.50	56.76	29.71	40	P. 1096
170	54.77	50.00	1.75	3.50	56.68	29.37	35	P. 1136
283	49.89	....	1.96	....	60.70	26.75	30	P. 1249
194	54.66	50.00	1.75	3.50	56.87	29.31	36	P. 1160
168	55.59	....	1.20	....	56.81	29.81	40	P. 1134
122	54.83	....	3.10	....	60.60	29.40	35	P. 1088
118	54.30	....	1.33	....	56.10	29.12	35	P. 1084
176	53.37	....	1 20	....	56.25	28.62	35	P. 1142
121	54.88	50.00	1.47	3.50	56.52	29.43	35	P. 1087
....	54.31	....	1.63	....	57.38	29.12	36	....
251	53.61	50.00	1.47	3.50	55.73	28.75	70	P. 1217
210	54.77	50.00	1.00	3.50	55.87	29.87	25	P. 1176
31	55.59	50.00	1.00	3.50	56.62	29.81	50	P. 997
....	54.66	....	1.16	....	56.07	29.31	48	....
12	55.48	56.00	1.00	3.50	46.48	29.75	30	P. 912
292	55.35	50.00	1.26	3.50	56.75	29.68	30	P. 1258
320	54.19	50.00	1.71	3.50	56.23	29.06	35	P. 1286
9	55.12	56.00	1.00	3.50	56.08	29.56	30	P. 909
241	53.61	50.00	1.59	3.50	55.62	28.75	25	P. 1207
33	55.07	56.00	1.00	3.50	56.26	29.53	35	P. 933
237	55.01	50.00	0.98	3.50	56.43	29.50	25	P. 1203
136	53.95	56.00	1.20	3.50	56.88	28.93	40	P. 1102
202	54.19	50.00	1.20	3.50	55.75	29.06	25	P. 1168
198	55.12	50.00	1.20	3.50	56.43	29.56	25	P. 1164
17	54.19	56.00	1.00	3.50	55.44	29.06	30	P. 917
159	55.70	....	2.00	....	57.50	29.87	40	P. 1125
308	55.35	....	2.13	....	57.57	29.68	30	P. 1274
322	54.95	50.00	1.71	3.50	56.90	29.46	35	P. 1288
138	53.84	56.00	1.92	3.50	57.22	28.87	40	P. 1104
317	55.12	50.00	1.00	3.50	56.29	29.56	40	P. 1283
189	56.17	50.00	1.20	3.50	58.43	30.12	35	P. 1155
18	55.48	56.00	1.00	3.50	56.26	29.75	30	P. 918
300	53.61	50.00	1.71	3.50	55.87	28.75	35	P. 1266
7	55.87	56.00	1.00	3.50	57.00	29.96	30	P. 907
35	54.30	56.00	1.00	3.50	55.63	29.12	30	P. 935
23	54.88	56.00	1.00	3.50	56.03	29.43	30	P. 923
....	54.84	....	1.31	....	56.48	29.41	32	....
212	54.77	....	0.98	....	55.37	29.37	25	P. 1178
22	55.40	50.00	1.00	3.50	56.43	29.71	35	P. 983
67	54.77	50.00	2.45	3.50	56.22	29.87	35	P. 1033
25	55.40	50.00	1.00	3.50	56.43	29.71	50	P. 991
69	54.19	50.00	2.21	3.50	56.65	29.06	40	P. 1085
9	55.58	50.00	1.20	3.50	56.87	29.78	30	P. 975
109	55.24	50.00	1.00	3.50	56.40	29.62	50	P. 1075
49	55.59	50.00	1.10	3.50	56.90	29.81	40	P. 1015
101	55.24	....	1.00	....	56.22	29.62	50	P. 1067
145	54.30	50.00	1.80	3.50	56.64	29.12	50	P. 1111
111	55.24	50.00	1.34	3.50	56.82	29.62	35	P. 1077
94	54.94	50.00	1.47	3.50	56.34	29.46	30	P. 1060
70	55.58	50.00	1.00	3.50	56.47	29.78	30	P. 1066

TABLE I.—ANALYSIS OF SAMPLES OF PARIS

Chief Chemist's Number.	Name and Address of Manufacturer or Importer.	Sampled at
P. 998	I. Pfeiffer, New York, N. Y.,	Irwin, Geo. W. Fink.
P. 1000	I. Pfeiffer, New York, N. Y.,	Irwin, Fisher & Forker,
P. 1275	I. Pfeiffer, New York, N. Y.,	Atglen, Futhey & Swisher,
P. 1005	I. Pfeiffer, New York, N. Y.,	Jennnette, F. A. Galer,
P. 1070	I. Pfeiffer, New York, N. Y.,	Emlenton, R. R. Gilmore,
P. 1072	I. Pfeiffer, New York, N. Y.,	Emlenton, Gosser Drug Co.,
P. 1306	I. Pfeiffer, New York, N. Y.,	Brookville, Henderson & Craig,
P. 966	I. Pfeiffer, New York, N. Y.,	West Chester, E. M. Hoops,
P. 1002	I. Pfeiffer, New York, N. Y.,	Jeannette, R. T. Hugus,
P. 970	I. Pfeiffer, New York, N. Y.,	Butler, R. M. Logan,
P. 995	I. Pfeiffer, New York, N. Y.,	Greensburg, A. E. Martin,
P. 983	I. Pfeiffer, New York, N. Y.,	Greenville, Roy McCartaney,
P. 1064	I. Pfeiffer, New York, N. Y.,	Ford City, McClelland Bros.,
P. 1305	I. Pfeiffer, New York, N. Y.,	Brookville, McKnight Son & Co.,
P. 1049	I. Pfeiffer, New York, N. Y.,	Philipsburg, W. M. Mellick,
P. 1246	I. Pfeiffer, New York, N. Y.,	Lancaster, Miller Drug Co.,
P. 1037	I. Pfeiffer, New York, N. Y.,	Vandergrift, T. W. Murphy,
P. 1025	I. Pfeiffer, New York, N. Y.,	Apollo, W. F. Pauly,
P. 971	I. Pfeiffer, New York, N. Y.,	Butler, Redick & Grohman,
P. 969	I. Pfeiffer, New York, N. Y.,	Butler, R. E. Reed,
P. 1314	I. Pfeiffer, New York, N. Y.,	New Kensington, D. A. Reeser,
P. 1188	I. Pfeiffer, New York, N. Y.,	Kutztown, E. J. Sellers,
P. 1118	I. Pfeiffer, New York, N. Y.,	Johnsonburg, V. R. Smith,
P. 964	I. Pfeiffer, New York, N. Y.,	Media, Henry C. Snowden, Jr.,
P. 939	I. Pfeiffer, New York, N. Y.,	Columbia, C. R. Strickler,
P. 1066	I. Pfeiffer, New York, N. Y.,	Kittanning, W. J. Sturgeon,
P. 986	I. Pfeiffer, New York, N. Y.,	Freeport, J. E. Williams,
P. 1053	I. Pfeiffer, New York, N. Y.,	Clearfield, Woodward & Brenner,
P. 942	I. Pfeiffer, New York, N. Y.,	Columbia, H. W. Zeamer,
		Average,
P. 1090	C. T. Raynolds & Co., New York, N. Y.	Union City, James B. Black,
P. 945	C. T. Raynolds & Co., New York, N. Y.	Mountville, A. S. Myers,
P. 1171	C. T. Raynolds & Co., New York, N. Y.	Reading, P. M. Ziegler Co.,
		Average,
P. 1223	Schieffelin & Co., New York, N. Y.,	St. Clair, F. W. Heinbach,
P. 985	The Sherwin-Williams Co., Cleveland, Ohio.	Greenville, C. D. Aldenderfer,
P. 1017	The Sherwin-Williams Co., Cleveland, Ohio.	Indiana, Elmer W. Allison,
P. 1174	The Sherwin-Williams Co., Cleveland, Ohio.	Reading, Bard Hardware Co.,
P. 1312	The Sherwin-Williams Co., Cleveland, Ohio.	New Kensington, D. E. Beegle,
P. 1215	The Sherwin-Williams Co., Cleveland, Ohio.	Schuylkill Haven, G. I. Bensinger,
P. 989	The Sherwin-Williams Co., Cleveland, Ohio.	Freeport, Louis N. Berube,
P. 978	The Sherwin-Williams Co., Cleveland, Ohio.	Grove City, A. E. Bligh & Co.,
P. 1227	The Sherwin-Williams Co., Cleveland, Ohio.	Altoona, Boecking & Meredith,
P. 1157	The Sherwin-Williams Co., Cleveland, Ohio.	Lebanon, C. E. Boger,
P. 1185	The Sherwin-Williams Co., Cleveland, Ohio.	Boyertown, J. & H. K. Boyer,
P. 1083	The Sherwin-Williams Co., Cleveland, Ohio.	Edinboro, Brick Drug Store,
P. 1013	The Sherwin-Williams Co., Cleveland, Ohio.	Scottdale, Broadway Drug Co.,
P. 1079	The Sherwin-Williams Co., Cleveland, Ohio.	Meadville, Grant W. Brock,

GREEN COLLECTED IN 1910—Continued.

Agent's Number.	Arsenious Oxide Combined with Copper.		Water-Soluble Arsenious Oxide.		Total arsenious oxide.	Copper oxide.	Price per pound.	Chief Chemist's Number.
	Found.	Guaranteed.	Found.	Guaranteed.				
	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Cts.	
32	55.65	50.00	1.10	3.50	56.81	29.84	40	P. 998
34	55.58	50.00	1.00	3.50	56.68	29.78	35	P. 1000
309	54.88	50.00	1.59	3.50	56.59	29.43	25	P. 1275
39	55.95	50.00	1.00	3.50	56.89	30.00	50	P. 1005
104	55.12	50.00	1.47	3.50	56.76	29.56	45	P. 1070
106	54.88	50.00	1.00	3.50	56.88	29.43	40	P. 1072
340	55.01	50.00	1.00	3.50	56.05	29.50	50	P. 1306
66	55.70	50.00	1.00	3.50	56.81	29.87	35	P. 966
36	54.77	50.00	1.72	3.50	56.68	29.37	40	P. 1002
4	55.48	50.00	1.00	3.50	56.50	29.75	35	P. 970
29	55.48	50.00	1.00	3.50	56.56	29.75	40	P. 995
17	53.67	50.00	2.48	3.50	56.31	28.78	40	P. 983
98	54.94	50.00	1.47	3.50	56.40	29.46	40	P. 1064
339	54.19	50.00	1.34	3.50	55.13	29.06	35	P. 1305
88	54.83	50.00	2.45	3.50	57.39	29.40	40	P. 1049
280	54.55	50.00	1.83	3.50	56.87	29.25	35	P. 1246
71	55.70	50.00	1.00	3.50	56.77	29.87	40	P. 1037
59	55.59	50.00	1.00	3.50	56.65	29.81	40	P. 1025
5	54.77	50.00	1.00	3.50	55.88	29.37	45	P. 971
3	55.35	50.00	1.00	3.50	56.34	29.68	35	P. 969
348	55.12	50.00	1.00	3.50	56.23	29.56	40	P. 1314
222	54.55	50 00	1.59	3.50	56.75	29.25	30	P. 1188
152	54.55	50.00	1.56	3.50	56.50	29.25	50	P. 1118
64	54.66	50.00	1.30	3.50	56.00	29.31	27	P. 964
39	54.86	------------	1.30	------------	55.75	29.15	35	P. 939
100	55.76	------------	1.20	------------	57.00	29.90	40	P. 1006
20	55.18	50.00	1.10	3.50	56.31	29.59	40	P. 986
87	54.19	50.00	1.47	3.50	56.84	29.06	40	P. 1053
42	54.30	------------	1.30	------------	55.64	29.12	35	P. 942
--------	55.02	------------	1.38	------------	56.47	29.50	39	----------
124	50.35	------------	2.52	------------	60.72	27.00	35	P. 1090
45	52.14	------------	2.47	------------	58.67	27.96	35	P. 945
205	55.35	56.00	1.00	2.00	56.25	29.68	30	P. 1171
--------	52.61	------------	2.00	------------	58.55	28.21	33	----------
267	53.61	50.00	0.98	3.50	55.55	28.75	35	P. 1223
19	56.64	50.00	1.00	3.50	56.37	30.37	40	P. 985
51	57.40	50.00	1.00	3.50	56.10	30.78	35	P. 1017
208	55.95	50.00	1.00	3.50	55.62	30.00	25	P. 1174
346	56.17	50.00	1.00	3.50	55.92	30.12	20	P. 1312
249	55.24	50.00	1.00	3.50	55.43	29.62	30	P. 1215
23	56.17	50.00	1.00	3.50	56.62	30.12	50	P. 989
12	57.27	50.00	1.00	3.50	56.43	30.71	40	P. 978
261	53.61	50.00	1.20	3.50	55.00	28.75	30	P. 1227
191	54.08	50.00	2.75	3.50	57.37	29.00	36	P. 1157
219	56.06	50.00	1.00	3.50	55.75	30.06	30	P. 1185
117	55.95	50.00	1.00	3.50	56.88	30.00	40	P. 1083
47	56.06	50.00	1.06	3.50	56.65	30.06	35	P. 1013
113	56.52	50.00	1.00	3.50	56.40	30.31	35	P. 1079

TABLE I.—ANALYSIS OF SAMPLES OF PARIS

Chief Chemist's Number.	Name and Address of Manufacturer or Importer.	Sampled at
P. 1068	The Sherwin-Williams Co., Cleveland, Ohio.	Kittanning, Wm. F. Brodhead,
P. 1010	The Sherwin-Williams Co., Cleveland, Ohio.	Scottdale, J. Warren Brooks,
P. 980	The Sherwin-Williams Co., Cleveland, Ohio.	Mercer, Carter Bros.,
P. 1009	The Sherwin-Williams Co., Cleveland, Ohio.	Mount Pleasant, O. F. Coldsmith,
P. 1001	The Sherwin-Williams Co., Cleveland, Ohio.	Irwin, Roy T. Cope,
P. 994	The Sherwin-Williams Co., Cleveland, Ohio.	Greensburg Copeland & Borlin,
P. 1004	The Sherwin-Williams Co., Cleveland, Ohio.	Jeannette, S. O. Daugherty,
P. 972	The Sherwin Williams Co., Cleveland, Ohio.	Butler, C. G. Dixon,
P. 1078	The Sherwin-Williams Co., Cleveland, Ohio.	Meadville, V. W. Eiler,
P. 1012	The Sherwin-Williams Co., Cleveland, Ohio.	Scottdale, J. O. Evans,
P. 1128	The Sherwin-Williams Co., Cleveland, Ohio.	Kane, O. W. Evans & Co.,
P. 976	The Sherwin-Williams Co., Cleveland, Ohio.	Grove City, I. N. Fithian,
P. 1091	The Sherwin-Williams Co., Cleveland, Ohio.	Union City, Wm. Gales,
P. 979	The Sherwin-Williams Co., Cleveland, Ohio.	Mercer, J. R. Good,
P. 1071	The Sherwin-Williams Co., Cleveland, Ohio.	Emlenton, Gosser Drug Co.,
P. 1030	The Sherwin-Williams Co., Cleveland, Ohio.	Apollo, W. A. Gray,
P. 1069	The Sherwin-Williams Co., Cleveland, Ohio.	East Brady, R. J. Greer,
P. 1092	The Sherwin-Williams Co., Cleveland, Ohio.	Corry, E. E. Guignon,
P. 1220	The Sherwin-Williams Co., Cleveland, Ohio.	St. Clair, H. J. Gwinner,
P. 1230	The Sherwin-Williams Co., Cleveland, Ohio.	Bedford, Ed. D. Heckerman,
P. 1165	The Sherwin-Williams Co., Cleveland, Ohio.	Myerstown, L. G. Hess,
P. 1313	The Sherwin-Williams Co., Cleveland, Ohio.	New Kensington, B. S. Hummell,
P. 1139	The Sherwin-Williams Co., Cleveland, Ohio.	Port Allegany, P. G. Kendall,
P. 1310	The Sherwin-Williams Co., Cleveland, Ohio.	Mars, P. L. Kerr & Son,
P. 1062	The Sherwin-Williams Co., Cleveland, Ohio.	Ford City, Geo. Kettl,
P. 1085	The Sherwin-Williams Co., Cleveland, Ohio.	North East, A. S. Knepp,
P. 1233	The Sherwin-Williams Co., Cleveland, Ohio.	Hyndman, M. H. Kramer,
P. 961	The Sherwin-Williams Co., Cleveland, Ohio.	Lenni Mills, C. L. La Shelle,
P. 1074	The Sherwin-Williams Co., Cleveland, Ohio.	Franklin, Wm. O. Mackey,
P. 1295	The Sherwin-Williams Co., Cleveland, Ohio.	Terre Hill, Marks & Moyer,
P. 1024	The Sherwin-Williams Co., Cleveland, Ohio.	Saltsburg, Joe A. McClaran,
P. 1304	The Sherwin-Williams Co., Cleveland, Ohio.	Brookville, McKnight, Son & Co.,
P. 1020	The Sherwin-Williams Co., Cleveland, Ohio.	Blairsville, M. G. Miller,

GREEN COLLECTED IN 1910—Continued.

Agent's Number.	Arsenious Oxide Combined with Copper.		Water-Soluble Arsenious Oxide.		Total arsenious oxide.	Copper oxide.	Price per pound.	Chief Chemist's Number.
	Found.	Guaranteed.	Found.	Guaranteed.				
	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Cts.	
102	56.64	50.00	1.00	3.50	56.76	30.37	35	P. 1068
44	57.10	50.00	1.00	3.50	56.88	30.63	40	P. 1010
14	56.11	....	1.00	....	56.06	30.09	40	P. 980
43	54.77	50.00	2.47	3.50	56.89	29.37	50	P. 1009
35	57.63	50.00	1.00	3.50	56.43	30.93	40	P. 1001
28	57.10	50.00	1.00	3.50	56.19	30.63	50	P. 994
33	56.83	50.00	1.00	3.50	56.59	30.50	35	P. 1004
6	56.64	50.00	1.30	3.50	56.37	30.37	40	P. 973
119	56.53	50.00	1.00	3.50	56.58	30.31	50	P. 1078
46	55.95	50.00	1.00	3.50	56.58	30.00	35	P. 1012
157	55.24	50.00	1.20	3.50	57.37	29.63	30	P. 1123
10	57.27	50.00	0.86	3.50	56.81	30.71	40	P. 976
125	56.22	50.00	1.00	3.50	56.70	30.15	40	P. 1091
13	56.52	50.00	1.00	3.50	56.31	30.31	40	P. 979
105	55.89	50.00	1.00	3.50	57.00	29.98	40	P. 1071
64	56.53	50.00	1.00	3.50	56.96	30.31	40	P. 1080
108	57.11	50.00	1.00	3.50	56.80	30.62	50	P. 1069
126	56.06	50.00	1.00	3.50	56.40	30.06	40	P. 1092
254	54.30	50.00	1.30	3.50	55.61	29.12	35	P. 1290
264	55.12	50.00	1.00	3.50	56.16	29.56	40	P. 1280
199	55.70	50.00	1.30	3.50	56.25	29.87	30	P. 1165
347	56.17	50.00	1.00	3.50	55.92	30.12	40	P. 1313
173	55.35	50.00	1.75	3.50	58.43	29.63	30	P. 1139
344	55.35	50.00	1.00	3.50	56.23	29.68	40	P. 1310
96	55.35	50.00	1.00	3.50	56.10	29.68	50	P. 1062
119	56.53	50.00	1.00	3.50	56.64	30.31	40	P. 1085
307	55.59	50.00	1.00	3.50	55.12	29.81	40	P. 1283
61	54.47	....	1.43	....	56.13	29.21	30	P. 961
103	56.17	50.00	1.00	3.50	57.36	30.12	35	P. 1074
339	55.12	50.00	1.00	3.50	56.17	29.56	30	P. 1295
58	55.95	50.00	1.06	3.50	56.47	30.00	35	P. 1024
333	54.55	....	1.00	....	55.13	29.25	35	P. 1304
54	56.64	50.00	1.00	3.50	56.22	30.37	35	P. 1030

TABLE I.—ANALYSIS OF SAMPLES OF PARIS

Chief Chemist's Number.	Name and Address of Manufacturer or Importer.	Sampled at
P. 1089	The Sherwin-Williams Co., Cleveland, Ohio.	Erie, Gus J. Miller,
P. 1154	The Sherwin-Williams Co., Cleveland, Ohio.	Annville, H. W. Miller,
P. 1127	The Sherwin-Williams Co., Cleveland, Ohio.	Warren, J. B. Mullen,
P. 1103	The Shewin-Williams Co., Cleveland, Ohio.	Lock Haven, National Medicine Co.,
P. 1124	The Sherwin-Williams Co., Cleveland, Ohio.	Kane, S. S. Newcomer,
P. 1308	The Sherwin-Williams Co., Cleveland, Ohio.	Brookville, John J. Patterson,
P. 1059	The Sherwin-Williams Co., Cleveland, Ohio.	Du Bois, J. S. Quinn,
P. 1234	The Sherwin-Williams Co., Cleveland, Ohio.	Hyndman, Chas. R. Rhodes,
P. 1086	The Sherwin-Williams Co., Cleveland, Ohio.	North East, Salchow & Baldwin,
P. 1307	The Sherwin-Williams Co., Clevelannd, Ohio.	Brookville, Geo. L. Sandt,
P. 1129	The Sherwin-Williams Co., Clevelannd, Ohio.	Warren, John Siegfried,
P. 1080	The Sherwin-Williams Co., Cleveland. Ohio.	Cambridge Springs, J. B. Torry,
P. 1226	The Sherwin Williams Co., Clevelannd, Ohio.	Altoona, H. W. Turner,
P. 1121	The Sherwin-Williams Co., Cleveland, Ohio.	Kane, E. H. Watkins,
P. 1297	The Sherwin-Williams Co., Cleveland, Ohio.	Terre Hill, S. S. Watts,
P. 987	The Sherwin-Williams Co., Cleveland, Ohio.	Freeport, J. E. Williams,
		Average,
P. 901	Smith, Kline & French Co., Philadelphia, Pa.	York Haven, I. M. Anspach,
P. 1218	Smith, Kline & French Co., Philadelphia, Pa.	Minersville, Geo. L. Brown,
P. 1169	Smith, Kline & French Co., Philadelphia, Pa.	Reading, C. S. Lyter,
P. 1162	Smith, Kline & French Co., Philadelphia, Pa.	Lebanon, E. R. Mader,
		Average,
P. 958	H. O. Snowden, Media, Pa.,	Swarthmore, Dewitt O. Lewis,
P. 918	Sonelheim Alsberg & Co., New York, N. Y.	Broguevllle, Grove & Uffelman,
P. 1196	The Wm. Stahler Drug Co., Norristown, Pa.	Birdsboro, N. J. Hoffman,
P. 1214	L. O. Thompson, Pottsville, Pa.,	Schuylkill Haven, Sausser Bros.,
P. 916	Unknown,	Glen Rock, T. W. Mather,
		Total average,

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*No arsenic nor copper detected.
Found Barium Sulphate, Calcium Sulphate, Lead Chromate, and Prussian Blue.

GREEN COLLECTED IN 1910—Continued.

Agent's Number.	Arsenious Oxide Combined with Copper.		Water-Soluble Arsenious Oxide.		Total arsenious oxide.	Copper oxide.	Price per pound.	Chief Chemist's Number.
	Found.	Guaranteed.	Found.	Guaranteed.				
	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Cts.	
123	56.88	50.00	1.00	3.50	56.64	30.50	30	P. 1080
188	56.34	50.00	1.00	3.50	56.56	30.21	30	P. 1154
161	56.17	50.00	1.20	3.50	56.17	30.12	40	P. 1127
137	56.64	50.00	1.44	3.50	58.20	30.37	35	P. 1103
158	56.34	50.00	1.20	3,50	56.87	30.21	40	P. 1124
342	56.64	50.00	1.00	3.50	56.35	30.37	35	P. 1308
98	56.17	50.00	1.00	3.50	56.52	30.12	40	P. 1059
268	56.06	50.00	1.00	3.50	56.16	30.06	35	P. 1234
120	56.64	50.00	1.00	3.50	56.70	30.37	40	P. 1086
341	55.89	50.00	1.00	3.50	56.05	29.93	35	P. 1307
163	56.28	50.00	1.20	3.50	56.75	30.18	40	P. 1129
114	55.40	50 00	1.00	3.50	56.70	29.71	35	P. 1080
260	55.85	50.00	1.20	3.50	55.73	29.68	35	P. 1226
155	56.52	50.00	1.20	3.50	56.93	30.31	35	P. 1121
331	55.35	50.00	1.00	3.50	56.05	29.68	30	P. 1297
21	56.58	50.00	1.00	3.50	56.81	30.34	40	P. 987
....	56.05	....	1.11	....	56.44	30.05	37	....
1	54.19	53.50	1.69	2.50	56.08	29.06	30	P. 901
258	53.08	....	1.59	....	55.61	28.43	35	P. 1218
208	54.66	....	1.20	....	55.93	29.31	40	P. 1169
196	54.08	....	1.93	....	56.56	29.00	35	P. 1163
....	53.99	....	1.60	....	56.08	28.95	35	....
58	54.35	....	1.30	....	55.76	29.09	35	P. 958
48	56.28	....	1.00	....	57.13	30.15	30	P. 948
260	54.66	50.00	1.73	3.50	56.25	29.31	30	P. 1196
248	54.19	....	1.71	....	56.04	29.06	28	P. 1214
16	*	....	*	....	*	*	30	P. 916
....	55.10	....	1.32	....	56.61	29.55	35	....

COMMONWEALTH OF PENNSYLVANIA.

DEPARTMENT OF AGRICULTURE.

Bulletin No. 205.

LIST OF

Fertilizer Manufacturers and Importers

AND

BRANDS OF THEIR FERTILIZERS FOR WHICH LICENSE TO SELL IN
PENNSYLVANIA DURING 1911 WAS TAKEN OUT PRIOR
TO FEBRUARY 21, 1911.

HARRISBURG:
C. E. AUGHINBAUGH, PRINTER TO THE STATE OF PENNSYLVANIA.
1911

Harvard College Library
Oct. 21, 1911.
Gift of
Pennsylvania State Library

SPECIAL NOTICE.

The attention of manufacturers, local dealers and agents is called to the list published herewith of manufacturers and their addresses, together with a list of the several brands of fertilizers licensed for sale in this State this year.

It is the duty of local dealers and agents to see that brands sold, offered, or exposed for sale by them are licensed, as if they are sold, offered or exposed for sale without license first having been taken out, they are liable, together with the manufacturer, to the penalty prescribed in Section 5, of the Act of May 1, 1909, governing the manufacture and sale of commercial fertilizers in Pennsylvania. Dealers and agents are therefore cautioned not to sell or have in possession for sale any brand that has not been duly licensed, in compliance with the provisions of said Act, published on the following pages, under the penalty prescribed therein.

N. B. Critchfield

Secretary of Agriculture.

Harrisburg, Pa., February 21, 1911.

The Act of 1st May, 1909, Commonly Referred to as "The New Fertilizer Law" is as Follows:

No. 205.

AN ACT

To regulate the manufacture and sale of commercial fertilizers; prescribing penalties for its violation, and repealing an act, entitled "An act to regulate the manufacture and sale of commercial fertilizers; providing for its enforcement, and prescribing penalties for its violation," approved the twenty-fifth day of March, Anno Domini one thousand nine hundred and one.

Commercial fertilizers.

Manufacture and sale of

Section 1. Be it enacted, &c., That every package of commercial fertilizer sold, offered, or exposed for sale, for manurial purposes within this Commonwealth, except the dung of domestic animals, lime, marl, and wood-ashes, shall have plainly stamped thereon the name and address of the manufacturer or importer and his place of business, the net weight of the contents of the package, the brand or trade-name of the fertilizer the package contains, and an analysis stating the percentage such fertilizer contains of nitrogen in an available form, of potash soluble in water, of soluble and reverted phosphoric acid, and of insoluble phosphoric acid.

Filing of statement.

Section 2. Every manufacturer or importer of commercial fertilizers, as specified in section one of this act, shall, on or before the first day of January of each year, or before offering them for sale in this Commonwealth, file annually with the Secretary of Agriculture a statement of the names and number of brands of such commercial fertilizers, having distinct trade-names, that he shall offer for sale during the next ensuing year, and a copy of the analysis of each one of such brands of commercial fertilizers, as required by section one of this act.

Filing of affidavit.

Sums to be paid yearly.

Section 3. In addition to the statement required by section two of this act, every manufacturer or importer of commercial fertilizers shall, on or before the first day of January of each year, or before offering them for sale in this Commonwealth, file annually with the Secretary of Agriculture an affidavit showing the amount of each brand of fertilizer, having a distinct trade-name, sold within the Commonwealth during the last preceding year; and if the said amount shall be one hundred tons or less, he or they shall pay or cause to be paid to the Secretary of Agriculture the sum of fifteen dollars for each and every brand of such commercial fertilizer, having a distinct trade name sold within the State during the last preceding year; and if the said amount shall exceed one hundred tons, Proviso.

and be less than five hundred tons, he or they shall pay the sum of twenty dollars, as aforesaid; and if the said amount shall be five hundred tons or more, he or they shall pay the sum of thirty dollars, as aforesaid. If such manufacturer or manufacturers, importer or importers, shall not have made any sales within the Commonwealth during the preceding year, he or they shall pay the sum of fifteen dollars upon each such brand, as aforesaid: Provided, That all monies so received shall be immediately paid by the Secretary of Agriculture into the State Treasury, for the use of the Commonwealth.

Prohibited articles.

Section 4. No person shall sell, offer, or expose for sale, in this State, any pulverized leather, hair, ground hoofs, horns, or wool waste, raw, steamed, roasted, or in any form, as a fertilizer, or as an ingredient of a fertilizer or manure, without an explicit statement of the fact; said statement to be conspicuously affixed to every package of such fertilizer or manure, and to accompany and go with every lot, parcel, or package of the same.

Violations.

Misdemeanor.

Fines.

Section 5. Any person or persons selling, offering, or exposing for sale, any commercial fertilizer or any brand of the same, having a distinct trade-name, without the analysis required by section one of this act, or with an analysis stating that it contains a larger percentage of any one or more of the above-named constituents than is contained therein, or for the sale of which all the provisions of sections two and three have not been complied with, or any person violating any of the provisions of section four of this act, shall be guilty of a misdemeanor, and, on conviction, shall be sentenced to pay a fine of not less than twenty-five nor more than one hundred dollars for the first offense, and not less than two hundred dollars for each subsequent offense. It shall be the duty of the Secretary of Agriculture to enforce the provisions of this act, and all penalties, costs, and fines recovered shall be paid to him or his duly authorized agent, and by him shall be immediately paid into the State Treasury, for the use of the Commonwealth.

Samples and analysis.

Inspection.

Section 6. The Secretary of Agriculture is hereby empowered to collect samples of commercial fertilizers, either in person or by his duly qualified agent or representative, and to have them analyzed, and to publish the results for the information of the public; and for this purpose the said Secretary of Agriculture, such assistants, agents, experts, chemists, detectives, and counsel as he shall duly authorize, shall have full access, ingress, and egress to and from all places of business, factories, barns, buildings, carriages, cars, and vessels, used in the manufacture and transportation, or sale, or any commercial fertilizer. They shall also have power to open any package or vessel containing or supposed to contain any commercial fertilizer, and take therefrom samples for analysis, upon tendering the value of said samples.

Section 7. The term "commercial fertilizers," as used in this act, shall be construed to mean any and every substance imported, manufactured, prepared, or sold for fertilizing or manuring purposes, except the dung of domestic animals, marl, lime, and wood-ashes, and not exempt by the provisions of section one of this act.

"Commercial fertilizers" defined.

Section 8. This act shall go into effect on and after the thirty-first day of July, one thousand nine hundred and nine; and the act, entitled "An act to regulate the manufacture and sale of commercial fertilizers; providing for its enforcement, and prescribing penalties for its violation," approved the twenty-fifth day of March, Anno Domini one thousand nine hundred and one, is hereby repealed.

Act of March 25, 1901, cited for repeal.

Approved—The 1st day of May, A. D. 1909.

EDWIN S. STUART.

No. 95.

AN ACT

Making it unlawful for any person, firm, or corporation, engaged in the manufacture or sale of commercial fertilizers, to use the word "bone" in connection with, or as part of the name of, any fertilizer, or any brand of the same, unless the phosphoric acid contained in such fertilizer shall be the product of pure animal bone; and providing a penalty for violation of the same.

Commercial fertilizers.

Use of the word "bone."

Section 1. Be it enacted, &c., That it shall be unlawful for any person, firm or corporation, engaged in the manufacture or sale of commercial fertilizers, to use the word "bone" in connection with, or as part of the name of, any fertilizer, or any brand of the same, unless the phosphoric acid contained in such fertilizer shall be the product of pure animal bone.

Misdemeanor.

Fine.

Section 2. Any person or persons violating the provisions of this act shall be deemed guilty of a misdemeanor, and, upon conviction thereof, shall pay a fine of fifty dollars for the first offense, and a fine of not less than one hundred dollars, nor more than two hundred dollars, for every subsequent offense; such fine or fines to be paid into the State Treasury, for the use of the Commonwealth. The Secretary of Agriculture shall, together with his deputies, agents, and assistants, be charged with the enforcement of this act.

Jurisdiction of aldermen and justice of the peace.

Section 3. All magistrates, aldermen, and justices of the peace throughout this Commonwealth shall have jurisdiction to hear and determine actions arising from violations of the provisions of this act, and shall have authority to hold for court, or to impose the penalty hereby prescribed, subject to appeal, as the law shall direct.

Section 4. This act shall go into effect on the first day of January, Anno Domini nineteen hundred and ten.

Approved—The 23d day of April, A. D. 1909.

EDWIN S. STUART.

LIST OF FERTILIZER MANUFACTURERS AND BRANDS OF THEIR FERTILIZERS FOR WHICH LICENSE TO SELL IN PENNSYLVANIA DURING 1911 WAS TAKEN OUT PRIOR TO AND INCLUDING, FEBRUARY 18, 1911.

AHRENS FERTILIZER CO., ESTERLY, PA.

"Pure Bone Meal."

THE ALLENTOWN MANUFACTURING CO., ALLENTOWN, PA.

"High Grade Truck & Garden Phosphate."
"High Grade Potato Phosphate."
"Complete Phosphate."
"Special $25.00 Phosphate."
"High Grade Phosphate and Potash."
"Economical Phosphate."

THE AMERICAN AGRICULTURAL CHEMICAL CO., NEW YORK, N. Y.

"Acid Phosphate."
"Gem Alkaline Phosphate."
"Penn Alkaline Phosphate."
"Shuler's Phosphate & Potash."
"Boss Potash Fertilizer."
"Big Crop Phosphate."
"Fruit Tree Invigorator."
"High Grade Phosphate & Potash."
"High Grade Potash Mixture."
"Superior Potash Mixture."
"Ammoniated Phosphate & Potash."
"Dead Shot Phosphate."
"Special Potash Mixture."
"10 Per Cent. Potash Mixture for Potatoes."
"Celery Special No. 2."
"Superior Compound."
"Potato Phosphate."
"Peerless Corn & Grain Grower."
"Lion Crop Grower."
"High Grade Potash Compound."
"Wheat & Haymaker."
"Complete Manure with 10 Per Cent. Potash."
"Keystone Grape Special."
"Complete Tobacco Manure."
"Top Dresser for Grass."
"Dissolved Animal Bone."
"Fine Ground Bone."
"Pure Ground Bone."
"Genuine German Kainit."
"Muriate of Potash."
"High Grade Sulphate of Potash."

"Nitrate of Soda."
"High Grade Dried Blood."
"Ground Tankage."
"Thomas Phosphate Powder." (Basic Slag).
"Allen's Alkaline Phosphate."
"Allen's Special for Wheat and Grass."
"Allen's Popular Phosphate."
"Allen's Special Brand Potato Manure."
"Bradley's Soluble Dissolved Phosphate."
"Bradley's Alkaline Phosphate & Potash."
"Bradley's Niagara Phosphate."
"Bradley's Bean & Potato Phosphate."
"Bradley's Dissolved Phosphate and Potash."
"Bradley's B. D. Sea Fowl Guano."
"Bradley's Complete Manure for Potatoes and Vegetables."
"Canton-Chemical Baker's Dissolved Phosphate."
"Canton-Chemical Baker's Dissolved S. C. Phosphate."
"Canton-Chemical Soluble Phosphate & Potash."
"Canton-Chemical Soluble Alkaline Phosphate."
"Canton-Chemical Eagle Phosphate."
"Canton-Chemical Harrow Brand Crop Grower."
"Canton-Chemical Resurgam Guano."
"Canton-Chemical Baker's Special Wheat, Corn & Grass Mixture."
"Canton-Chemical Potato Manure."
"Canton-Chemical Baker's Fish Guano."
"Canton-Chemical Baker's Standard High Grade Guano."
"Canton-Chemical C. C. C. Special Compound."
"Chicopee Farmer's Reliable."
"Clark's Cove Atlas Phosphate."
"Clark's Cove Triumph Phosphate & Potash."
"Clark's Cove Defiance Fertilizer.'
"Clark's Cove King Philip Alkaline Guano."
"Clark's Cove Potato & Hop Grower."
"Crocker's Dissolved Phosphate."
"Crocker's Dissolved Phosphate & Potash."
"Crocker's General Crop Fertilizer."
"Crocker's Universal Grain Grower."
"Crocker's Complete Manure."
"Crocker's New Rival Fertilizer."
"Crocker's Wheat & Corn Fertilizer."
"Crocker's Potato, Hop & Tobacco Fertilizer."
"Crocker's Ammoniated Superphosphate."
"Cumberland Phosphate & Potash."
"Cumberland Hawkeye Fertilizer."
"Cumberland Guano."
"Detrick's Dissolved S. C. Phosphate."
"Detrick's Soluble Phosphate & Potash."
"Detrick's Phosphate & Potash (16 x 4) Mixture."
"Detrick's P. & B. Special Fertilizer."
"Detrick's Paragon Ammoniated."
"Detrick's Phosphate & Potash."
"Detrick's Imperial Compound."
"Detrick's Corn & Oats Fertilizer."
"Detrick's Standard Potash Fertilizer."
"Detrick's Royal Crop Grower."
"Detrick's Kangaroo Komplete Kompound."
"Detrick's Quickstep Phosphate for Potatoes & Tobacco."
"Great Eastern Unammoniated Wheat Special."
"Great Eastern Dissolved Acid Phosphate."

"Great Eastern Soluble Acid Phosphate & Potash."
"Great Eastern English Wheat Grower."
"Great Eastern General."
"Great Eastern High Grade Cabbage Grower."
"Great Eastern Wheat Special."
"Great Eastern Vegetable Vine & Tobacco Fertilizer."
"Great Eastern Northern Corn Special."
"Lazaretto Dissolved Phosphate."
"Lazaretto Dissolved Phosphate & Potash."
"Lazaretto High Grade Dissolved Phosphate & Potash."
"Lazaretto Ammoniated Phosphate."
"Lazaretto Special Potato Fertilizer."
"Lazaretto Special Ammoniated Compound."
"Lazaretto Crop Grower."
"Maryland Dissolved S. C. Phosphate."
"Maryland Bono Superphosphate.'
"Maryland Linden Superphosphate."
"Maryland Alkaline Phosphate."
"Maryland O. K. Ammoniated Fertilizer."
"Maryland Special Compound for Potatoes & Tobacco."
"Maryland Ammoniated Phosphate."
"Michigan Carbon Works Red Line Phosphate."
"Michigan Carbon Works Wheat & Grass Fertilizer."
"Michigan Carbon Works Red Line Phosphate with Potash."
"Michigan Carbon Works Red Line Complete Fertilizer."
"Michigan Carbon Works General Crop Fertilizer."
"Michigan Carbon Works General Potato Fertilizer."
"Michigan Carbon Works Homestead Fertilizer."
"Milsom's Dissolved Phosphate."
"Milsom's Acid Phosphate."
"Milsom's Dissolved Phosphate & Potash."
"Milsom's Erie King Fertilizer."
"Milsom's Wheat, Oats & Barley Fertilizer."
"Milsom's Buffalo Guano."
"Milsom's Buffalo Fertilizer."
"Milsom's Potato, Hop & Tobacco Fertilizer."
"Milsom's Corn Fertilizer."
"Milsom's Vegetable Fertilizer."
"Moro-Phillips Soluble Phosphate."
"Moro-Phillips Great Crop Fertilizer."
"Moro-Phillips Wheat Special."
"Moro-Phillips Alkaline Phosphate."
"Moro-Phillips Farmer's Phosphate."
"Moro-Phillips C. & G. Complete Fertilizer."
"Moro-Phillips Standard Guano."
"Moro-Phillips Farmer's Potato Mixture."
"Moro-Phillips Pure Phuine."
Moro-Phillips Ten Per Cent. Potato & Vegetable Manure."
"Moro-Phillips Special Fertilizer."
"Moro-Phillips Special Compound."
"Niagara Dissolved Phosphate & Potash."
"Niagara Grain & Grass Grower."
"Niagara Wheat & Corn Producer."
"North Western Acid Phosphate."

"North Western Dissolved Phosphate & Potash."
"North Western XXX Alkaline Phosphate."
"North Western Success Phosphate."
"North Western Complete Compound."
"North Western Challenge Crop Grower."
"North Western High Grade General Fertilizer."
"North Western 10 Per Cent. Potato Fertilizer."
"Pacific Dissolved Phosphate."
"Pacific Dissolved Phosphate & Potash."
"Pacific A. No. 1 Phosphate."
"Pacific Nobsque Guano."
"Pacific Potato Phosphate."
"Packers' Union Superior Acid Phosphate."
"Packers' Union Wheat, Oats & Clover Fertilizer."
"Packers' Union Banner Wheat Grower."
"Packers' Union American Wheat & Rye Grower."
"Packers' Union Universal Fertilizer."
"Packers' Union Potato Manure."
"Packers' Union Animal Corn Fertilizer."
"Packers' Union Gardener's Complete Manure."
"Quinnipiac Soluble Dissolved Phosphate"
"Quinnipiac Dissolved Phosphate & Potash."
"Quinnipiac Mohawk Fertilizer."
"Quinnipiac Climax Phosphate."
"Read's Acid Phosphate."
"Read's Phosphate & Potash."
"Read's High Grade Special."
"Read's Leader B. & B. Fertilizer."
"Read's Standard Superphosphate."
"Read's Farmer's Friend Superphosphate."
"Reese's Elm Phosphate."
"Reese's Dissolved Phosphate of Lime."
"Reese's Wheat Special."
"Reese's Grass & Grain."
"Reese's Crown Phosphate & Potash."
"Reese's High Grade Potash Mixture."
"Reese's Half & Half."
"Reese's Challenge Crop Grower."
"Reese's Pilgrim Fertilizer.'
"Reese's Ammoniated Phosphate Mixture."
"Reese's Potato Manure."
"Reese's Harvest Queen."
"Reese's Mayflower."
"Sharpless & Carpenter's Acid Phosphate."
"Sharpless & Carpenter's Soluble Phosphate & Potash."
"Sharpless & Carpenter's No. 2 for Grain & Grass."
"Sharpless & Carpenter's Royal Spring Mixture."
"Sharpless & Carpenter's Farmer's Brand Phosphate."
"Sharpless & Carpenter's Potato, Corn & Truck Guano."
"Sharpless & Carpenter's No. 1 Brand Phosphate."
"Sharpless & Carpenter's Gilt Edge Potato & Tobacco Manure."
"Sharpless & Carpenter's Dissolved Fertilizer for Potatoes & General Use."
"Sharpless & Carpenter's Soluble Tampico Guano."
"Standard Phosphate & Potash."

"Standard 'A' Fertilizer."
"Susquehanna Superior Rock Phosphate."
"Susquehanna Soluble Phosphate."
"Susquehanna Alkaline Phosphate."
"Susquehanna Grain & Grass Producer."
"Susquehanna High Grade Phosphate & Potash."
"Susquehanna Crop Grower."
"Susquehanna XXV Phosphate."
"Susquehanna Ammoniated Phosphate."
"Susquehanna Potato Phosphate."
"Susquehanna Special Potato & Tobacco Manure."
"Susquehanna Animal Phosphate."
"Susquehanna High Grade Truck Mixture."
"Tygert-Allen's Star Dissolved Phosphate."
"Tygert-Allen's Star Soluble Phosphate & Potash."
"Tygert-Allen's Star Potato Grower."
"Tygert-Allen's Standard Brand Phosphate."
"Tygert-Allen's Ten Per Cent. Potato & Vegetable Manure."
"Tygert-Allen's Star Brand Phosphate."
"Wheeler's Unammoniated Wheat Grower."
"Wheeler's Peerless Acid Phosphate."
"Wheeler's Wheat & Clover Fertilizer."
"Wheeler's High Grade Phosphate & Potash."
"Wheeler's Royal Wheat Grower."
"Wheeler's Corn Fertilizer."
"Wheeler's Potato Manure."
"Wheeler's Superior Truck."
"Williams & Clark's Acorn Acid Phosphate."
"Wiliams & Clark's Dissolved Phosphate & Potash."
"Williams & Clark's Prolific Fertilizer."
"Williams & Clark's Good Grower Potato Phosphate."
"Williams & Clark's Americus Universal Fertilizer."
"Williams & Clark's Americus High Grade Special Fertilizer."
"Williams & Clark's Royal Phosphate."
"Zell's Dissolved Phosphate."
"Zell's Electric Phosphate."
"Zell's Little Giant."
"Zell's Economizer Phosphate."
"Zell's Hustler Phosphate."
"Zell's Ammoniated Superphosphate."
"Zell's Special Compound for Potatoes & Vegetables."

AMERICAN FERTILIZING CO. BALTIMORE, MD.

"American Eagle Crop Grower."
"American Excelsior Guano."
"Ammoniated Crop Compound."
"American Champion Grain Grower."
"American Fish and Bone Compound."
"American Reliable Crop Guano."
"American Prize Truck Guano."
"American Special Compound Guano."
"American Special Superphosphate."
"Dissolved Phosphate & Potash."

"American Formula Wheat & Corn."
"American Special Potash Mixture."
"High Grade Acid Phosphate."
"Muriate of Potash."
"Nitrate of Soda."
"Genuine German Kainit."
"Pure Raw Bone."
"Bob White Fertilizer for Wheat & Grass."

AMERICAN REDUCTION CO. OF PITTSBURG, PITTSBURG, PA.

"Common Sense."

ARMOUR FERTILIZER WORKS, INC., BALTIMORE, MD.

"Cereal Phos."
"Star Phos."
"Phos. & Pot. No. 1."
"Sure Crop."
"Potash Mixture."
"Wheat & Clover."
"Banner."
"Special Mixture."
"Wheat, Corn & Oat Spec."
"Crop Grower."
"Royal Ammoniated."
"Wheat & Grass Spec."
"Superior."
"Farmer's Choice."
"Grain Grower."
"Fruit & Root Crop Spec."
"High Grade Potato."
"5 Per Cent. Trucker."
"Bone, Blood & Potash."
"All Soluble."
"Bone Meal."
"Raw Bone Meal."
"Nitrate of Soda."
"Muriate of Potash."
"Kainit."

R. S. AUCKER, SHAMOKIN, PA.

"High Grade Bone & Slaughter House Phosphate."
"Grade B. Bone & Slaughter House Phosphate."
"Grade D. Bone & Slaughter House Phosphate."
"High Grade Potash Ammoniated Potato & Truck Phos."
"Economy Potash Phosphate."
"Bone Meal with Potash, Special Mixture."

WILLIAM C. BALL, MEDIA, PA.

Ball's Potato Manure."
"Ball's $25 Goods."

BALTIMORE FERTILIZER CO., BALTIMORE, MD.

"Old Honesty."
"Honest Success."
"Honest Potato Grower."
"Honest Tankage, Rock and Potash."
"Honest 8 and 3."

J. H. BARTENSCHLAGER, STEWARTSTOWN, PA.

"Bartenschlager's Champion."
"Bartenschlager's Potato, Tobacco & Vegetable Compound."

BAUGH & SONS COMPANY, PHILADELPHIA, PA.

"Baugh's Raw Bone Meal—Warranted Pure."
"Baugh's Fine Ground Bone."
"Baugh's Export Bone with Potash."
"Baugh's Pure Bone & Muriate Potash Mixture."
"Baugh's Pure Dissolved Animal Bones."
"Baugh's Animal Base & Potash Compound (For all Crops)."
"Baugh's Excelsior Guano."
"Baugh's Double Eagle—$25 Phosphate."
"Baugh's Commercial Super Phosphate (For General Use.)"
"Baugh's General Crop Grower (For All Crops)."
"Baugh's Complete Animal Base Fertilizer."
"Baugh's Peruvian Guano Substitute (For Potatoes & all Vegetables)."
"Baugh's Special Potato Manure."
"Baugh's Potato & Truck Special (For All Truck Crops)."
"Baugh's Wheat Fertilizer (For Wheat & Grass)."
"Baugh's Wrapper Leaf Brand (A special manure for seed leaf tobacco.)"
"Baugh's Grand Rapid High Grade Truck Guano."
"Baugh's Peninsula Grain Producer."
"Baugh's High Grade Acid Phosphate."
"Baugh's Ammoniated Soluble Alkaline."
"Baugh's High Grade Potash Mixture."
"Baugh's 12 & 5 Phosphate & Potash."
"Baugh's 16 Per Cent. Acid Phosphate."
"Baugh's Balanced Plant Food (A superior fertilizer for general use)."
"Baugh's 10 & 8 Phosphate & Potash."
"Nitrate of Soda."
"High Grade Sulphate of Potash."
"Muriate of Potash."
"Genuine German Kainit."
"Baugh's Soluble Alkaline Super Phosphate."

HENRY V. BAXTER, CHESTER, PA.

"Pure Ground Bone."
"I-X-L Phosphate."

BERGER BROS., GLENDON, PA.

"Potato Truck Special."
"Lehigh Super Phosphate."
"Farmer's Favorite Super Phosphate."
"Peerless Phosphate."

D. BLOCHER & CO., GETTYSBURG, PA.
"High Grade Super Phosphate."
"Ammoniated Soluble Phosphate."

BOWKER FERTILIZER COMPANY, NEW YORK CITY.
"Bowker's Apex Phosphate."
"Bowker's Dissolved Phosphate."
"Bowker's Soluble Phosphate."
"Bowker's Empire State Phosphate & Potash."
"Bowker's Superphosphate with Potash."
"Bowker's Superphosphate with Potash for Grass & Grain."
"Bowker's Golden Harvest Fertilizer."
"Bowker's Ammoniated O. I. O. Phosphate."
"Bowker's Potash Fertilizer."
"Bowker's Six Per Cent. Potato Fertilizer."
"Bowker's Potash or Staple Phosphate."
"Bowker's Corn & Grain Grower."
"Bowker's Sure Crop Phosphate."
"Bowker's Ideal Potash Compound."
"Bowker's Potato & Vegetable Phosphate."
"Bowker's Farm & Garden Phosphate."
"Bowker's Ammoniated Food for Flowers."
"Bowker's Market Garden Fertilizer."
"Stockbridge Special Complete Manure for Seeding Down Permanent Dressing and Legumes."
"Stockbridge Special Complete Manure for Potates & Vegetables."
"Stockbridge Special Complete Manure for Corn and all grain crops."
"Stockbridge Special Complete Manure for Top Dressing and for Forcing."
"Bowker's Potato & Vegetable Fertilizer."
"Bowker's Hill & Drill Phosphate."
"Bowker's Lawn & Garden Dressing."
"Bowker's Market Bone."
"Bowker's Fresh Ground Bone."
"Nitrate of Soda."
"Muriate of Potash."
"Bowker's Bone Flour."

BRADLEY & GREEN FERTILIZER CO., PHILADELPHIA, PA.
"High Grade Potato Guano."
"Extra High Grade Potato Guano."

S. B. BRODBECK, BRODBECKS, PA., for
"Brodbeck's Standard."
"Brodbeck's Reliable."
"Brodbeck's Special Potato Fertilizer."
"Brodbeck's Alkaline."
"Brodbeck's Ruth Dissolved Phosphate."

ELIAS S. BRUBACHER, RICHLAND, PA.
"Wheat and Grass Special."

THE BUFFALO FERTILIZER CO., BUFFALO, N. Y.
"Dissolved Phosphate."
"General Crop."

"Phosphate & Potash."
"Extra Phosphate and Potash."
"Fish Guano."
"General Favorite."
"Farmers Choice."
"Ideal Wheat & Corn."
"Celery & Potato Special."
"Vegetable & Potato."
"Garden Truck."
"High Grade Manure."
"Bone Meal."
"Pure Raw Bone."
"Muriate of Potash."
"Sulphate of Potash."
"Nitrate of Soda."
"Kainit."
"Garbage Tankage."

CAMBRIA FERTILIZER CO., JOHNSTOWN, PA.
"Pure Fine Ground Bone Dust."
"Corn & Potato Manure."
"Standard Phosphate."
"B. B. Phosphate."

THE CENTRAL CHEMICAL COMPANY, HAGERSTOWN, MD.
"C C C Commonwealth."

THE CHESAPEAKE CHEMICAL CO., BALTIMORE, MD.
"C-C-Co's Triumph Guano."
"C-C-Co's Excelsior Fertilizer."
"C-C-Co's National Crop Grower."
"C-C-Co's English Mixture."
"C-C-Co's Champion Fertilizer."
"C-C-Co's Farmers Favorite."
"C-C-Co's Imperial Guano."
"C-C-Co's Reliable Phosphate."
"C-C-Co's Celebrated Mixture."
"C-C-Co's Corn & Buckwheat."
"C-C-Co's Dissolved Phosphate."

THE COE-MORTIMER CO., NEW YORK, N. Y.
"Peruvian Vegetable Grower (Peruvian Guano Base)."
"Peruvian Market Gardeners' Fertilizer (Peruvian Guano Base)."
"Peruvian Grass Top Dressing (Peruvian Guano Base.)"
"Peruvian Grass, Grain, Clover & Fruit Fertilizer (Peruvian Guano Base.)"
"Thomas' Phosphate Powder (Basic Slag Phosphate)."
"Nitrate of Soda."
"Muriate of Potash."
"Sulphate of Potash."
"E. Frank Coe's Columbian Corn & Potatoe."
"E. Frank Coe's Extra Special Potato Fertilizer & Fruit Grower."
"E. Frank Coe's Famous Prize Brand Grain & Grass Fertilizer."
"E. Frank Coe's Gold Brand Excelsior Guano."
"E. Frank Coe's H. G. Dissolved Phosphate & Potash."

"E. Frank Coe's H. G. Soluble Phosphate."
"E. Frank Coe's Onondaga Special Fertilizer (For all crops)."
"E. Frank Coe's Universal Fertilizer."
"E. Frank Coe's Western New Yorker."
"E. Frank Coe's 12-5 Dissolved Phosphate & Potash."
"E. Frank Coe's XXX Pure Ground Bone."
"E. Frank Coe's Pennsylvania No. 1 Grain Special (For Wheat, Rye and Oats)."
"Peruvian Tobacco Fertilizer (Peruvian Guano Base) For Wrapper Leaf."

HENRY COPE & CO., LINCOLN UNIVERSITY, PA.

"Pure Bone Phosphate."
"Queen of Elk Valley Phosphate."
"Ammoniated Phosphate."
"Potato and Corn Phosphate."
"Wheat Grower and Complete Manure."
"High Grade Soluble Phosphoric Acid & Potash."
"Regular Grade Soluble Phosphoric Acid & Potash."
"Acid Phosphate.'
"Nitrate of Soda."

JOSIAH COPE & CO., BALTIMORE, MD.

"Josiah Cope & Co. Puro Bono Phosphate."
"Josiah Cope & Co. Potato & Tobacco Phosphate."
"Josiah Cope & Co. Try Me Fertilizer."
"Josiah Cope & Co. Ammoniated Phosphate."
"Josiah Cope & Co. Wheat & Grass Special."
"Josiah Cope & Co. High Grade Phosphate & Potash."
"Josiah Cope & Co. Soluble Phosphate & Potash."
"Josiah Cope & Co. Acidulated Phosphate."
"Josiah Cope & Co. Pure Ground Raw Bone."
"Josiah Cope & Co. Steamed Bone."
"Josiah Cope & Co. Excelsior."

C. & W. H. CORSON, PLYMOUTH MEETING, PA.

"Corson's Prepared Lime and Potash."

THE JAMES G. DOWNWARD CO., COATESVILLE, PA.

"Special Wheat & Grass Fertilizer."
"Special Corn Manure."
"Royal Phosphate."
"Soluble Phosphate & Potash.'
"Special Mixture."
"All Crop Fertilizer."
"Pure Ground Raw Bone."
"Special Potato Fertilizer.'
"High Grade Acid Phosphate."
"Ammoniated Phosphate."
"Pioneer Super Phosphate."
"High Grade Potato Fertilizer."
"High Grade Pioneer for Tobacco."
"Nitrate of Soda."

HENRY A. DREER, INC., PHILADELPHIA, PA.
"Dreer's Peerless Plant Food."

WALLACE DUNGAN, DOYLESTOWN, PA.
"Bone Flour."
"Potato Manure."
"Pebel Hill Home made Animal Bone Mixture."

AMOS EBY & CO., LEAMAN PLACE, PA.
"Pequea High Grade."
"Pequea Special Potato."
"Pequea Valley Fertilizer."
"Pequea Economy."
"Pequea Ammoniated."
"Pequea Crop Grower."
"Pequea Farmers Mixture."

F. C. EISEMAN, MEADVILLE, PA.
"General Crop Grower."

W. S. FARMER & CO., BALTIMORE, MD.
"W. S. Farmer & Co., Standard Phosphate."
"W. S. Farmer & Co., Potato and Tobacco Phosphate."
"W. S. Farmer & Co., Harvest Queen."
"W. S. Farmer & Co., Clyde Brand."
"W. S. Farmer & Co., Empire Alkaline Phosphate."
"W. S. Farmer & Co., B & P. Phosphate."
"W. S. Farmer & Co., Dissolved S. C. Phosphate."

THE FARMERS FERTILIZER & FEED CO., WESTMINSTER, MD.
"No. 1 Phosphate."
"No. 3 Phosphate."
"XX Phosphate."
"Carroll Phosphate."
"P. A. & P. Phosphate."
"Acid Phosphate."

FARMERS' FERTILIZER WORKS, ELIZABETHTOWN, PA.
"Farmers' I. X. L."
"Pride of Donegal."
"Potato, Tobacco and Truck Manure."
"Special Potato and Tobacco Manure."
"Grain and Grass Special."
"Special Compound."
"Farmers' Economy."
"Big Bonanza."

MAHLON FRETZ, SELLERSVILLE, PA.
"Fretz's Standard Phosphate."

JOSEPH R. GAWTHROP, KENNETT SQUARE, PA.
"Fine Ground Bone Meal."
"Complete Ammoniated Special Phosphate for Corn, Oats & Wheat."
"Special Potato Phosphate."
"Champion Fertilizer for Wheat and Grass."
"Crop Grower."

J. C. GERBIG & SON, CHAMBERSBURG, PA.
"Pure Ground Bone."

GERMAN KALI WORKS, BALTIMORE, MD.
"Muriate of Potash."
"Sulphate of Potash."
"Kainit."
"Nitrate of Soda."

GRIFFITH & BOYD CO., BALTIMORE, MD.
"Harvest Queen Phosphate."
"Spring Crop Grower."
"Farmers Potato Manure."
"Ammoniated Bone Phos."
"Farmers Improved Phos."
"Special Grain Grower."
"Fish Bone & Potash."
"Royal Potash Guano."
"Stable Manure Substitute."
"Valley Fertilizer."
"Cereal Plant Food."
"High Grade Acid Phos."
"XX Potash Manure."
"Peerless Fertilizer."
"Double Strength Tobacco Grower."
"Special Guano."
"Soft Ground Bone Meal."
"Pure Fine Ground Raw Bouo Meal."
"Nitro Crop Feeder."
"Gilt Edge Crop Guano."
"Vegetable Bone."
"Soluble 12 & 5 Mixture."

H. F. HAGER, QUAKERTOWN, PA.
"Farmers Favorite Phosphate."
"Panic Phosphate."

FRANK HARTRANFT, COATESVILLE, PA.
"Cooks Phosphate."
"Ammoniated Phosphate."
"Potato Phosphate."
"Special Phosphate."
"Spring Crop Grower."
"Pure Ground Bone."

S. M. HESS & BROTHER, INC., PHILADELPHIA, PA.
"S. M. Hess & Bro.'s High Grade Acid Phosphate."
"S. M. Hess & Bro.'s Jumbo Complete Formula."
"S. M. Hess & Bro.'s Tobacco Manure."
"S. M. Hess & Bro.'s Soluble Phosphate."
"S. M. Hess & Bro.'s Keystone Phosphate."
"S. M. Hess & Bro.'s Fish & Potash Manure."
"S. M. Hess & Bro.'s Emperor Phosphate."

"S. M. Hess & Bro.'s Special Corn Manure."
"S. M. Hess & Bro.'s Superior Potash Mixture."
"S. M. Hess & Bro.'s Soluble Phosphate & Potash."
"S. M. Hess & Bro.'s Wheat & Grass Manure."
"S. M. Hess & Bro.'s Potato & Truck Manure."
"S. M. Hess & Bro.'s Standard Alkaline."
"S. M. Hess & Bro.'s Special Compound."
"S. M. Hess & Bro.'s Special Potato Manure."
"S. M. Hess & Bro.'s Ground Bone."
"S. M. Hess & Bro.'s Peerless Phosphate."
"S. M. Hess & Bro.'s The Scientific Manure."
"S. M. Hess & Bro.'s Muriate of Potash."
"S. M. Hess & Bro.'s Fine Ground Bone."
"S. M. Hess & Bro.s Farmers' Grain & Clover Grower."
"S. M. Hess & Bro.'s Ammoniated Super Phosphate."
"S. M. Hess & Bro.'s Nitrate of Soda."

PHILIP HOFFMAN & BRO., RAUBSVILLE, PA.

"Hoffmans Potato Fertilizer."
"Hoffmans Grangers Choice Fertilizer."
"Hoffmans King Fertilizer."

THE HUBBARD FERTILIZER CO. OF BALTIMORE CITY, BALTIMORE, MD.

"Hubbard's Jersey Trucker."
"Hubbard's Royal Ensign."
"Hubbard's Standard Phosphate."
"Hubbard's Farmers' I.X.L."
"Hubbard's Jewel Phosphate."
"Hubbards Oriental Phosphate.'
"Hubbard's Columbia Gem."
"Hubbard's Special Mixture 10 & 4."
"Hubbard's B. & P. 10 & 2."
"Hubbard's Corn & Buckwheat 6 & 3."
"Hubbard's 14 Per Cent. Phosphate."
"Hubbard's Warranted Raw Bone."
"Hubbard's Climax Phosphate."
"Nitrate of Soda."
"Pure German Kainit."

INTERNATIONAL SEED CO., ROCHESTER, N. Y.

"International Grain and Grass Fertilizer."
"International Potato and Truck Manure."
"International Electric Fertilizer."
"International A 1 Special Manure."

THE JARECKI CHEMICAL CO., SANDUSKY, OHIO.

"Lake Erie Guano with Phosphate and Potash."
"Number one Formula."
"C. O. D. Phosphate."
"Pure Ground Bone."
"Square Brand Phosphate and Potash."
"Raw Bone and Phosphate Mixture."
"Fish, Phosphate and Potash, Tobacco and Potato Food."

"Super Phosphate and Potash."
"Tobacco and Truck Grower."
"High Potash Mixture."
"Black Soil Special."

T. S. KENDERDINE & SONS, NEWTOWN, PA.

"Kenderdine's B. Phosphate."
"Kenderdine's Potato Phosphate."
"Kenderdine's Potato & Corn Phosphate."
"Kenderdine's Ammoniated Phosphate."
"Kenderdine's Nitrate of Soda."

THE KEYSTONE BONE FERTILIZER COMPANY, PHILADELPHIA, PA.

"Grain & Grass Manure."
"Special Penna. Grain Mixture."
"General Manure."
"Economy Potash Compound."
"Excelsior Wheat Grower."
"Ammoniated Superphosphate & Potash."
"Vegetable Guano."
"20th Century Special."
"High Grade Truck & Tobacco Guano."
"Royal Corn & Potato Manure."
"Standard Potato Manure."
"Supreme Potato & Truck Manure."
"Pure Ground Bone."
"8 and 5."
"10 and 2."
"14 Per Cent. Acid Phosphate."

DAVID KUHNS, LEHIGHTON, R. F. D. No.1, PA.

"Pure Ground Bone Meal."

LANCASTER BONE FERTILIZER CO., LANCASTER, PA.

"Potato, Tobacco & Truck Manure."
"Scientific An. Bone Comp."
"Keystone Standard."
"Pure Ground Bone."
"Comp Am. Bone Manure."
"Independent Grain Grower."
"Diamond."
"Special Guano."
"National Crop Grower."
"Harvest King."
"Trucker's Success."
"Potato Fruit & Vegetable."
"Special Grange Mixture."
"Farmer's Economy."

THE LANCASTER CHEMICAL COMPANY, LANCASTER, PA.

"No. 17 Wrapper Leaf Special."
"No. 1 Tobacco & Vegetable."
"No. 3 Pure Dissolved Animal Bone & Potash."

"No. 4 Rising Sun Animal Bone."
"No. 5 Flag Brand."
"No. 6 Hard Times Fertilizer."
"No. 10 Economist."
"No. 8 Acid Phosphate."
"No. 11 Keystone Brand."
"No. 12 Alkaline Fertilizer.'
"No. 13 Special Potash Manure."
"No. 14 Wheat & Grass Fertilizer."
"No. 15 General Crop Special."
"No. 16 Phosphoric Acid & Potash Special,"
"No. 9 Bone Meal."
"No. 2 Dewey Brand."
"No. 18 Success Brand."
"No. 19 Potato Special."

DANIEL LEVAN, LEBANON, PA.
"Levan's Special Potato & Tobacco Fertilizer."
"Levan's Special Corn Fertilizer."
"Levan's General Crop Grower."
"Levan's Royal Potash Compound."
"Levan's Wheat & Grass Special."
"Levan's Lebanon Special."
"Levan's Wheat & Grass Fertilizer."
"Levan's Super Phosphate & Potash."
"Levan's Special Truck Fertilizer."
"Levan's Special Mixture."
"Nitrate of Soda."
"Muriate of Potash."
"Acid Phosphate."

LISTER AGRICULTURAL CHEMICAL WORKS, NEWARK, N. J.
"Lister's Ammoniated Dissolved Superphosphate."
"Lister's Special Tobacco Fertilizer."
"Lister's Crescent Complete Manure."
"Lister's Standard Pure Superphosphate of Lime."
"Lister's Special 10 Per Cent. Potato Fertilizer."
"Lister's 3-6-10 For Potatoes."
"Lister's Potato Manure."
"Lister's Celebrated Ground Bone & Tankage Acidulated."
"Lister's Bone Meal."
"Lister's Golden Sheaf."
"Lister's Buyers' Choice Acid Phosphate."
"Lister's Plant Food."
"Lister's Dissolved Phosphate & Potash."
"Lister's Potash Mixture."
"Lister's Grain & Grass Fertilizer."
"Lister's 10 Per Cent. Alkaline Potato Fertilizer."
"Lister's Phosphoric Acid & Potash. (10-4)."
"Lister's Atlas Brand Alkaline Fertilizer."
"Lister's Special Crop Producer."
"Lister's U. S. Superphosphate."
"Lister's Reliance."

"Lister's G Brand."
"Lister's Harvest Queen Phosphate."
"Lister's Success Fertilizer."
"Lister's Wheat & Rye Fertilizer."
"Lister's Corn & Potato Fertilizer."
"Lister's Special Wheat Fertilizer."
"Lister's Potato & Corn No. 2 Fertilizer."
"Lister's Grass & Oat Fertilizer."
"Lister's Special Fertilizer for Tomatoes."
"Muriate of Potash."
"Kainit."
"H. G. Sulphate of Potash."
"Nitrate of Soda."
"Ground Tankage 6 & 30."

FREDERICK LUDLAM CO., BALTIMORE, MD.
"Ludlams Cecrops Fertilizers, Potato & Tobacco."
"Ludlams Cecrops Fertilizers, Standard."
"Ludlams Cecrops Fertilizers, A. B. F. Brand."
"Ludlams Cecrops Fertilizers, Spring Special."
"Ludlams Cecrops Fertilizers, Standard Potash."
"Ludlams Cecrops Fertilizers, Palmetto."
"Ludlams Cecrops Fertilizers, Harvest Queen."
"Ludlams Cecrops Fertilizers, No. 2 for Grain & Grass."
"Ludlams Cecrops Fertilizers, C & G Brand."
"Ludlams Cecrops Fertilizers, On Top."
"Ludlams Cecrops Fertilizers, Phosphate & Potash."
"Ludlams Cecrops Fertilizers, I X L Brand."
"Ludlams Cecrops Fertilizers, Wheat Special."
"Ludlams Cecrops Fertilizers, Economy."
"Ludlams Cecrops Fertilizers, Dissolved Phosphate."

THE MAPES FORMULA & PERUVIAN GUANO CO., NEW YORK CITY, N. Y.
"Mapes' Potato Manure."
"Mapes' Tobacco Starter Improved."
"Mapes' Tobacco Manure Wrapper Brand."
"Mapes' Economical Potato Manure."
"Mapes' Vegetable or Complete Manure for Light Soils."
"Mapes' Average Soil Complete Manure."
"Mapes' Corn Manure."
"Mapes' Complete 'A' Brand."
"Mapes' Complete Manure for General Use."
"Mapes" Cereal Brand."
"Mapes' Grain Brand."
"Mapes' General Crop Brand."
"Mapes' Complete Manure 10 Per Cent. Potash."
"Mapes' Top Dresser Improved Full Strength."
"Mapes' Top Dresser Improved Half Srength."

NOAH MARKEL, SEITZLAND, PA.
"Markel's Ammoniated Phosphate."
"Markel's Potato Grower."
"Markel's Electric Phosphate."
"Markel's Special Phosphate."
"Markel's A. C. C. Phosphate."

D. B. MARTIN CO., PHILADELPHIA, PA.
"Martin's Pure Raw Bone Meal."
"Martin's Pure Ground Bone."
"Martin's Pure Dissolved Animal Bone."
"Martin's Pure Animal Bone & Potash."
"Martin's Potash & Soluble No. 1 Phosphate."
"Martin's Potash & Soluble No. 2 Phosphate."
"Martin's Potash & Soluble No. 3 Phosphate."
"Martin's Acid Phosphate."
"Martin's Claremont Vegetable Grower."
"Martin's Bull Head Fertilizer for Cotton & Tobacco."
"Martin's Corn & Cereal Special."
"Martin's Special Potato Manure."
"Martin's One Eight & Four."
"Martin's Dissolved Organic Compound."
"Martin's Sure Grower."
"Martin's Crop Producer."
"Martin's Prize Potato."
"Martin's Gilt Edge Potato Manure."
"Martin's Special Compound."

HENRY MAULE, PHILADELPHIA, PA., for
"Panmure Plant Food."

FREDERICK MEHRING, BRUCEVILLE, MD.
"Acid Phosphate."
"General Crop Grower."
"Twenty Six Dollar Phosphate."
"Potash and Phos. Acid."

HENRY F. MICHELL COMPANY, PHILADELPHIA, PA.
"Michell's Pure Raw Bone Meal."
"Michell's H. G. Ammoniated Phosphate."

FRANK P. MILLER, SPRINGTOWN, PA.
"Farmers Choice."
"Farmers Reliable."

THE MOWREY LATSHAW HARDWARE CO., SPRING CITY, PA.
"Clover Brand Phosphate."

NASSAU FERTILIZER COMPANY, NEW YORK CITY, N. Y.
"Gladiator Truck & Potato."
"Nassau Practical."
"Special Potato Fertilizer."
"Common Sense Potato Manure."
"Plow Brand."
"Old Hickory."
"General Favorite."
"Wheat & Grass Grower."
"Ten & Eight Special."
"Potash & Phosphate."

"Royal Mixture."
"Grass & Grain Fertilizer."
"Soluble Phosphate."

NITRATE AGENCIES COMPANY, NEW YORK CITY, N. Y.
"Nitrate of Soda."
"Muriate of Potash."
"Sulphate of Potash."
"Acid Phosphate."

G. OBER & SONS CO. OF BALTIMORE CITY, BALTIMORE, MD.
"Ober's Special Plant Food."
"Ober's Stag Guano."
"Ober's Farmers Mixture."
"Ober's Independent Am. Sup. Phos."
"Ober's Standard Potash Compound."
"Ober's Dissolved Phosphate and Potash."
"Ober's Dissolved Phosphate."

OXFORD PACKING WORKS, OXFORD, PA.
"O. P. W. No. 1."
"O. P. W. No. 2."
"O. P. W. No. 4."
"Grange Two."
"Grange Three."

OYLER & SPANGLER, GETTYSBURG, PA.
"Gettysburg."
"Acidless."

PATAPSCO GUANO CO., BALTIMORE, MD.
"Patapsco Early Trucker for Quick Growth."
"Columbian Guano for Truck, Potatoes & Tobacco."
"Patapsco Special Wheat Compound—Animal Bone Base."
"Patapsco Potato Manure."
"Patapsco Tobacco & Potato Fertilizer."
"Grange Mixture."
"Patapsco Fish Guano."
"Coon Brand Guano."
"Patapsco Grain & Grass Producer."
"Sea Gull Guano."
"Patapsco B. B. & P. Brand."
"Patapsco High Brade Phosphate & Potash."
"Patapsco Soluble Phosphate & Potash."
"Baltimore Soluble Phosphate."
"Patapsco Alkaline Plant Food."
"Patapsco Phospho Potash."
"Patapsco Pure Dissolved S. C. Phosphate."
"Battle Ax Phosphate."
"Patapsco Pure Ground Bone."
"Patapsco Ground Steamed Bone."
"Genuine German Kainit."
"Muriate of Potash."
"Nitrate of Soda."
"Patapsco Corn & Tomato Fertilizer."

C. C. PEIRSON'S SONS, PHILADELPHIA, PA.
"Index Bone Meal."

PENNA. AMMONIA & FERTILIZER WORKS, HARRISBURG, PA.
"Potato Vegetable & Tobacco Fertilizer."
"Dauphin Brand."
"Royal Mixture."
"Capital Brand."
"Phosphate & Potash."

THE PENNSYLVANIA FERTILIZER CO., BUFFALO, N. Y.
"Acid Phosphate."
"Special 14 Per Cent. Phosphate."
"Grain & Grass."
"Standard."
"Four Fold."
"Big Bonanza."
"Vegetable and Vine."
"Economy."
"Potato and Truck Manure."
"Empire 10 Per Cent."
"Grain Special."

J. D. PERKINS, COATESVILLE, PA.
"Perkin's Monarch Phosphate."
"Perkin's Special Bono Manure."
"Perkin's Globe Phosphate."
"Perkin's Pure Bone Meal."

PIEDMONT MT. AIRY GUANO CO., BALTIMORE, MD.
"Piedmont Pennsylvania Potato Producer."
"Piedmont Pennsylvania Grain Grower."
"Piedmont Economy."
"Piedmont Success."
"Piedmont Farmers Favorite."
"Piedmont Special Potash Mixture."
"Piedmont Soluble Phosphate & Potash."
"Piedmont 14 Per Cent. Acid Phosphate."
"Piedmont Royal Ammoniated Bone & Potash."
"Piedmont Perfection Guano."
"Piedmont Farmers Potash Mixture."
"Piedmont Plow Brand."
"Levering's Standard."
"Levering's Ammoniated Bone."
"Levering's Harvest Queen."
"Levering's I X L Crop Grower."
"Insula Guano."

PIONEER FERTILIZER CO., CHICAGO, ILL.
"Pioneer General Crop Grower."
"Pioneer Truck & Corn Grower."
"Pioneer 1-7-1 Fertilizer."

"Pioneer 2-8-4 Fertilizer."
"Pioneer 3-8-5 Fertilizer."
"Pioneer 4-8-7 Fertilizer."
"Pioneer 2-8-10 Fertilizer."
"Pioneer High Grade Acid Phosphate."
"Pioneer 8-3 Fertilizer."
"Pioneer 10-2 Fertilizer."
"Pioneer 10-8 Fertilizer."
"Pioneer 12-5 Fertilizer."
"Pioneer Bone Meal."
"Muriate of Potash."
"Sulphate of Potash."
"Kainit."
"Nitrate of Soda."

PITTSBURG PROVISION & PACKING CO., PITTSBURG, PA.

"No. 1 Pure Raw Bone Meal."
"Pure Raw Bone Meal."
"Crescent Butchers Ground Bone."
"Pure Bone & Meat."
"Pure Bone with Potash."
"Special Potato Fertilizer."
"Corn & Potato Fertilizer."
"Keystone Fertilizer."
"Lawn Fertilizer."
"Guano Fertilizer.'
"Phosphate & Potash."
"Acid Phosphate."
"Pure Bone Flour."
"Nitrate of Soda."
"Smith's Grower," Mfg. for A. W. Smith Co., Pittsburg, Pa.

THE POLLOCK FERTILIZER CO., BALTIMORE, MD., BY THE AMERICAN AGRICULTURAL CHEMICAL CO., NEW YORK CITY, N. Y.

"The Pollock Fertilizer Co., Special Potato & Tobacco Fertilizer."
"The Pollock Fertilizer Co., Ammoniated Super Phosphate."
"The Pollock Fertilizer Co., Superior Corn & Tomato Fertilizer."
"The Pollock Fertilizer Co., Special Wheat Grower."
"The Pollock Fertilizer Co., Crop Invigorator."
"The Pollock Fertilizer Co., Owl Brand Guano."
"The Pollock Fertilizer Co., Star Alkaline Phosphate."
"The Pollock Fertilizer Co., Sun Guano."
"The Pollock Fertilizer Co., Dissolved Phosphate & Potash."
"The Pollock Fertilizer Co., Soluble Phosphate."
"The Pollock Fertilizer Co., Victor Brand Phosphate."
"The Pollock Fertilizer Co., Dissolved S. C. Phosphate."
"The Pollock Fertilizer Co., Ground Animal Bone."
"The Pollock Fertilizer Co., Soft Ground Bone."

PUGH & LYONS. OXFORD, PA.

"Ground Raw Bone."
"Bone Phosphate."

RAMSBURG FERTILIZER CO., FREDERICK, MD.

"Excelsior Plant Food."
"Old Virginia Compound."
"Alkaline Phosphate."
"Queen."
"Super Phosphate."
"Special Rock & Potash."
"Ammoniated Phosphate."

RASIN-MONUMENTAL COMPANY, BALTIMORE, MD.

"Rasin's X.X.X. Fertilizer."
"Rasin's Empire Guano."
"Wm. Penn Crop Grower."
"Rasin's National Crop Compound."
"Rasin's Best Wheat & Grass Producer."
"Rasin's United Grain Grower."
"Rasin's Royal Fish Bone & Potash."
"Rasin's I. X. L. Fertilizer."
"Rasin's Wheat, Corn & Oats Mixture."
"Rasin's Vegetable Special."
"Monumental Potato Manure."
"Rasin's Genessee Valley Root Manure."
"Rasin's Phosphate & Potash Fertilizer."
"Rasin's Special Phosphate & Potash."
"Rasin's Wheat & Truck Mixture."
"Rasin's Wheat Potash Mixture."
"Rasin's Half & Half Mixture."
"Rasin's Triple Phosphate & Potash."
"Rasin's Special Formulae for Corn & Buckwheat."
"Rasin's Acid Phosphate."
"Seawall Special."
"Muriate of Potash."
"Nitrate of Soda."
"Genuine German Kainit."
"Pure Raw Bone (4½)."
"Pure Raw Bone (3½)."

READING BONE FERTILIZER CO., READING, PA.

"Gilt Edge Potato & Tobacco Grower."
"Reading All Crop Special."
"Reading Sterling Potato Grower."
"Reading Special Potato and Tobacco Grower."
"Farmers Tankage & Potash, For Corn, Grain & Grass."
"Reading Special Grain & Grass Producer."
"Schuylkill Valley Favorite For Grain & Grass."
"Never Fail Crop Grower."
"Tobacco & Truck Special."
"Pure Raw Bone."
"Pure Bone Meal."
"Reading Tankage Special."
"Reading Harvest Queen."
"Dissolved Animal Matter.'
"Alkaline Phosphate & Potash."
"Soluble Dissolved Phosphate."

"Soluble Phosphate & Potash."
"High Grade Potash Mixture."
"Blood, Meat & Potash Mixture."
"Economy Brand."
"Farmers Union Fertilizer."
"Nitrate of Soda."
"Muriate of Potash."
"14 Per Cent. Acid Phosphate."

ESTATE OF JACOB REESE, by the Delaware County Trust Safe Deposit & Title Insurance Co., Executor, CHESTER, PA.

"Odorless Slag Phosphate."

J. G. REICHARD & BRO., ASHLAND, PA.

"Surpass Phosphate."
"Little Giant."
"Lehigh Potato Manure."

ROBERT A. REICHARD, ALLENTOWN, PA.

"Truckers' Favorite."
"Lehigh Potato Manure."
"Golden Harvest Phosphate."
"Pure Ground Bone."
"Surpass Phosphate."
"Superior Phosphate."
"Peerless Phosphate."
"Little Giant Phosphate."
"Farmers' Favorite."
"Acid Phosphate."

D. W. ROMBERGER, ELIZABETHVILLE, PA.

"Romberger's Tankage."

F. S. ROYSTER GUANO CO., NORTHERN DIVISION, BALTIMORE, MD.

"Royster's Imperial Formula."
"Royester's Special Wheat, Corn & Grass Producer."
"Royster's Practical Truck Guano."
"Royster's Ammoniated Potash Compound."
"Royster's Good Cheer Brand."
"Royster's Prolific Potato Producer."
"Royster's Big Yield Potato Producer."
"Royster's Golden Harvest Fertilizer."
"Royster's Champion Crop Compound."
"Royster's Challenge Complete Compound."
"Royster's Gold Seal Potato & Tobacco Special."
"Royster's Complete Potato Manure.."
"Royster's High Grade 16 Per Cent. Acid Phosphate (Buckwheat Special)."
"Royster's Special Fruit & Crop Grower."
"Royster's 14 Per Cent. Acid Phosphate."
"Royster's Superior Potash Mixture."
"Royster's Alkaline Phosphate."
"Royster's Farmers Delight Fertilizer."
"Royster's Bumper Crop Phosphate."

"Royster's Universal Crop Grower."
"Royster's Peerless Grain and Grass Grower."
"Royster's Corn & Hop Special Fertilizer."
"Royster's High Grade Potash Mixture."
"Royster's Pure Raw Bone Meal."
"Royster's Wheat, Oats & Barley Fertilizer."
"Royster's Fine Ground Bone Meal."
"Genuine German Kainit."
"Muriate of Potash."
"Sulphate of Potash."
"Nitrate of Soda."

SCHAAL-SHELDON FERTILIZER COMPANY, BUFFALO, N. Y.

"Dissolved Phosphate."
"Dissolved Phosphate with Extra Potash."
"Empire."
"Superior."
"Farmers' Favorite."
"Truckers' Manure."
"Guano."
"Schaal's Standard."
"Schaal's Corn & Potato."
"Pure Ground Bone.'

THE SCOTT FERTILIZER CO., ELKTON, MD.

"Scott's Sure Growth Super Phos."
"Scott's Sure Growth Compound."
"Scott's Potato Grower."
"Scott's Potato & Truck Special."
"Scott's Grain Special."
"Scott's Wheat & Grass Grower."
"Scott's Corn & Oats Grower."
"Scott's Standard Phosphate."
"Scott's Sure Crop Grower."
"Scott's Tip Top & Potash."
"Scott's Soluble Phos. & Potash, 12-5."
"Scott's Alkaline Phosphate 8-5."
"Scott's Tip Top Soluble Phos."
"Scott's Fritch's Special."
"Scott's Sol. Phos. & Potash, 12-3."

M. L. SHOEMAKER & CO., LTD., PHILADELPHIA, PA.

"Shoemaker's Special Ten Per Cent. Potato Fertilizer, No. 1."
"Shoemaker's Special Ten Per Cent. Potato Fertilizer, No. 2."
"Shoemaker's Swift Sure Guano for Tomatoes, Truck & Corn."
"Shoemaker's New Jersey Special For Wheat and Clover."
"Shoemaker's Swift Sure Guano For Fall Trade."
"Shoemaker's New Jersey Special For Oats."
"Shoemaker's Wheat Fertilizer Special, No. 2."
"Shoemaker's Pure Raw Bone Meal."
"Shoemaker's Dissolved Phosphate and Potash."
"Swift Sure Super-Phosphate for Potatoes."
"Swift Sure Super-Phosphate for General Use."

"Swift Sure Super-Phosphate for Tobacco."
"Good Enough Super-Phosphate."
"Swift Sure Bone Beal."
"Echo Super-Phosphate."
"The Twenty-Three Dollar Super-Phosphate."
"Dissolved South Carolina Rock."

F. A. SIMONS, MAUD, PA.

"The Farmer's Favorite High Grade Phosphate (For Truck & Corn)."
"The Farmer's Favorite High Grade Phosphate (Potato Grade)."
"The Farmer's Favorite High Grade Phosphate (For General Use)."

THE SMITH AGRICULTURAL CHEMICAL COMPANY, COLUMBUS, OHIO.

"Ohio Farmers' Alkaline Phosphate."
"Ohio Farmers' Soluble Phosphate & Potash."
"Ohio Farmers' Climax Phosphate."
"Ohio Farmers' Wheat Maker & Seeding Down."
"Ohio Farmers' Corn, Oats & Wheat Fertilizer."
"Ohio Farmers' Ammoniated Phosphate & Potash."
"Ohio Farmers' Excelsior Phosphate."
"Ohio Farmers' Potato & Tobacco Special."
"Bone Meal with Phosphate & Potash."
"Bone Meal."

H. H. SMYSER, YORK, PA.

"Ammoniated Chicago Bone and Tankage."

SOUTHERN FERTILIZING CO., YORK, PA., BY THE AMERICAN AGRICULTURAL CHEMICAL CO., NEW YORK, N. Y.

"Southern Fertilizing Co., Dissolved Phosphate."
"Southern Fertilizing Co., Ox Brand Phosphate & Potash."
"Southern Fertilizing Co., Farmers Mixture."
"Southern Fertilizing Co., Special Brand for all Crops."
"Southern Fertilizing Co., Royal Wheat & Grass Grower."
"Southern Fertilizing Co., General Crop Grower."
"Southern Fertilizing Co., Farmers Choice Brand."
"Southern Fertilizing Co., Queen of the Harvest."
"Southern Fertilizing Co., Special Potato Grower."
"Southern Fertilizing Co., Wheat, Corn & Grass Grower."
"Southern Fertilizing Co., Ammoniated Dissolved Fertilizer."
"Southern Fertilizing Co., Potato Truck & Tobacco Fertilizer."

J. L. & H. STADLER RENDERING & FERTILIZER CO., CLEVELAND, OHIO.

"Valley Phosphate."
"Corn & Wheat Special."
"Vegetable & Grain Grower."
"Pure Bone Meal."
"Acid Phosphate."
"Potato & Tobacco Grower."

STEININGER BROS., MIDDLEBURG, PA., BY YORK CHEMICAL WORKS, YORK, PA.

"Grain & Grass."
"Special Mixture."

STRAYER BROS. & CO., BY YORK CHEMICAL WORKS, YORK, PA.
"Strayer's Special Wheat & Corn Fertilizer."

SWIFT AND COMPANY, CHICAGO, ILL.
"Swift's Pure Superphosphate."
"Swift's Pure Onion Potato & Tobacco Fertilizer."
"Swift's Pure Early Potato & Vegetable Grower."
"Swift's Pure Special Potato Fertilizer."
"Swift's Pure Grain Fertilizer.
"Swift's Pure Truck Grower."
"Swift's Pure Ammoniated Bone & Potash."
"Swift's Pure Potato, Celery & Onion Grower."
"Swift's Pure Diamond A Fertilizer."
"Swift's Pure Diamond B Fertilizer."
"Swift's Pure Diamond C Fertilizer."
"Swift's Pure Diamond D Fertilizer."
"Swift's Pure Diamond E Fertilizer."
"Swift's Pure Diamond F Fertilizer."
"Swift's Pure Diamond G Fertilizer."
"Swift's Pure Diamond H Fertilizer."
"Swift's Pure Special Phosphate & Potash."
"Swift's Pure High Grade Phosphate & Potash."
"Swift's Pure Garden City Phosphate."
"Swift's Pure Ground Dried Blood."
"Swift's Pure Bone Meal."
"Swift's Pure Ground Steamed Bone."
"Muriate of Potash."
"Sulphate of Potash."
"Kainit."
"Nitrate of Soda."

J. M. TEMPLIN, HONEY BROOK, PA.
"No. 4 Atlas Brand."
"No. 8 High Grade Potash-Manure."
"No. 5 High Grade Acid Phosphate."

JAMES THOMAS, WILLIAMSPORT, PA.
"Thomas' Special Compound for Wheat, Oats, Corn and Grass."
"Thomas' Klondyke Brand Phosphate."
"Thomas' Standard Brand Phosphate."
"Thomas' Potato and Truck Manure."
"Thomas' Animal Ground Bone."
"Thomas' Dissolved Alkaline Phosphate."
"Thomas' Dissolved Florida Phosphate."

D. A. THOMAS & CO., HAGERSTOWN, MD.
"Soluble Phosphate & Potash."

I. P. THOMAS & SON CO., PHILADELPHIA, PA.
"Tip Top Superphosphate."
"Farmers Choice Phos."
"Champion Phos."
"Normal Phos."

"Improved Super Phos."
"Victor Potash Manure."
"Thomas' Wheat & Corn Fertilizer."
"Superior Super Phosphate."
"Truckers High Grade Guano."
"Special Potato Manure."
"Potato Fertilizer."
"Thomas' Scientific Tobacco Grower."
"Top Dresser for Grass."
"Special Corn Fertilizer."
"Special Alkaline Fertilizer."
"Alkaline Fertilizer."
"Thomas' Square Deal Fertilizer."
"S. C. Phosphate."
"Pure Ground Bone."

JACOB TRINLEY & SONS, LINFIELD, PA.

"Pure Raw Bone Meal."
"Pure Raw Bone Super Phosphate."
"Grain and Grass Grower."
"Ravene Phosphate for all crops."
"Special Potato Manure."

F. W. TUNNELL & COMPANY, INC., PHILADELPHIA, PA.

"No. 1 Special High Grade Potato Manure."
"Special High Grade Potato Manure."
"Royal Wheat Grower."
"Truckers' High Grade Fish Guano."
"Royal Fish Guano."
"Pure Ground Bone."
"Potato & Grain Manure."
"Sweet & White Potato Manure."
"Complete Superphosphate.'
"Ammoniated Phosphate & Potash."
"Raw & Acidulated Animal Compound."
"Dissolved Rock.'
"Gehman's Special."
"Re-Seived Phosphate."

TUSCARORA FERTILIZER COMPANY, BALTIMORE, MD.

"Acid Phos."
"Phos. & Potash."
"Alkaline."
"Ammo. Phos."
"Crop Grower."
"Sure Grower."
"York State Spec."
"Standard."
"Fruit & Potato."
"Big Four."
"Animal Bone."

THE J. E. TYGERT CO., PHILADELPHIA, PA., BY THE AMERICAN AGRICULTURAL CO., NEW YORK CITY.

"Dissolved Phosphate."
"Acid Phosphate."
"Eclipse Fertilizer."
"Soluble Phosphate & Potash."
"Electro Phosphate."
"Prolific Phosphate."
"Potato Fertilizer."
"Popular Phosphate."
"Golden Harvest Phosphate."
"Victor Crop Grower."
"Ammoniated Super Phosphate."
"Ten per cent. Grain Grower."
"Standard Fertilizer."
"Gold Edge Potato Guano."
"Old Reliable Phosphate."
"Potato Special."
"Early Truck Guano."
"Special Potato & Tobacco Fertilizer."
"Fearless Fertilizer."
"Potato Guano."

UNION CHEMICAL WORKS, INC., NORTH WALES, PA.

"High Grade Vegetable Guano."
"Grain & Grass Grower."
"Potato & Celery Special."
"Farmers Special."
"General Crop Grower.'"
"Raw Bone Meal."
"Pure Ground Bone."
"Animal Bone & Potash."
"Superphosphate & Potash No. 1."
"Superphosphate & Potash No. 2."
"Superphosphate & Potash for Potatoes."

THE UNITED STATES FERTILIZER CO., BALTIMORE, MD.

"Farm Bell Pennant Winner."
"Farm Bell Buckeye Guano."
"Farm Bell Animal Ammo."
"Farm Bell Fruit and Potato."
"Farm Bell Standard Guano."
"Farm Bell Special Mixture."
"Farm Bell Phosphate and Potash."
"Farm Bell Acid Phosphate."

VIRGINIA-CAROLINA CHEMICAL CO., FOR RE-SALE BY RASIN MONUMENTAL CO., BALTIMORE, MD.

"V. C. C. Co's Standard Crop Grower."
"V. C. C. Co's Special Compound for Wheat."
"V. C. C. Co's National Ammoniated Guano."
"V. C. C. Co's Standard Tomato Grower."
"V. C. C. Co's Special for Wheat & Grass."
"V. C. C. Co's Fish, Bone & Potash."

"V. C. C. Co's Standard Corn & Grain Grower."
"V. C. C. Co's Prize Potato Manure."
"V. C. C. Co's Special Corn Compound."
"V. C. C. Co's Peerless Phosphate & Potash."
"V. C. C. Co's Corn & Buckwheat Special."
"V. C. C. Co's Standard Phosphate & Potash."
"V. C. C. Co's Special Phosphate & Potash."
"V. C. C. Co's Special Potash Mixture."
"V. C. C. Co's Double Phosphate & Potash."
"V. C. C. Co's Giant Phosphate & Potash."
"V. C. C. Co's Acid Phosphate."
"Muriate of Potash."
"Nitrate of Soda."
"Genuine German Kainit."
"V. C. C. Co's Pure Raw Bone."

EMIL WAHL MANUFACTURING CO., PHILADELPHIA, PA.
"Emil Wahl's Warranted Pure Philadelphia Button Bone Meal."

JOS. C. WALKER & SONS CO., GAP, PA.
"Pride of Pequea—High Grade."
"Pride of Pequea."

ABRAHAM WALTEMYER, STEWARTSTOWN, PA.
"Grain & Grass Grower."
"Potato Phosphate."
"Mixture."
"Crop Grower."

J. WENDEROTH & SONS, CAMDEN, N. J.
"10 Per Cent. Fertilizer."

W. E. WHANN COMPANY, PHILADELPHIA, PA., BY THE AMERICAN AGRICULTURAL CO., NEW YORK CITY.
"Whann's Chester Valley Special Potato & Truck Fertilizer."
"Whann's Chester Valley Fish & Potash Fertilizer."
"Whann's Chester Valley Favorite Fertilizer."
"Whann's Chester Valley Available Ammoniated Superphosphate."
"Whann's Chester Valley Nitrate Mixture for Top Dressing."
"Whann's Chester Valley 10 Per Cent. Sweet Potato & Tomato Manure."
"Whann's Chester Valley 10 Per Cent. Potato Manure."
"Whann's Chester Valley No. 2 Ammoniated Superphosphate."
"Whann's Chester Valley Economist Fertilizer."
"Whann's Chester Valley 15 Per Cent. Guano."
"Whann's Chester Valley Special Ammoniated Superphosphate."
"Whann's Alkaline Phosphate."
"Whann's South Carolina Phosphate."

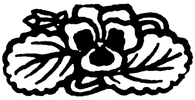
THE ROBERT A. WOOLDRIDGE CO., BALTIMORE, MD.
"Wooldridge's Florida Acid Phosphate."
"Wooldridge's No. 1 Phosphate and Potash."
"Wooldridge's No. 2 Phosphate and Potash."
"Wooldridge's German Potash Mixture."

"Wooldridge's Ideal Grain and Grass Producer."
"Wooldridge's Liberty Bell Potash Mixture."
"Wooldridge's Old Sledge Phosphate."
"Wooldridge's Farmer's Favorite Cereal Compound."
"Wooldridge's Ammoniated Phosphate."
"Wooldridge's Champion Giant Phosphate."
"Wooldridge's Chieftian Phosphate."
"Wooldridge's Triumph Brand Phosphate."
"Wooldridge's Special Potato and Tobacco Fertilizer."
"Wooldridge's Fernwood Grange Mixture."
"Wooldridge's Pure Raw Bone."

THE WOOLDRIDGE FERTILIZER CO., BALTIMORE, MD.
"F. F. V. Flesh and Fish Vegetator."
"Cyclone."
"Tiger Phosphate."
"Old Hickory Phosphate."
"Wooldridge's Clover Leaf Crop Grower."
"Virginia Belle Potash Mixture."
"High Grade Potato and Tomato Grower."
"Curacao Guano."

YORK CHEMICAL WORKS, YORK, PA.
"Pure Ground Bone."
"Pure Dissolved Bone."
"Ammoniated R. B."
"Standard."
"Special Tobacco."
"Potato & Truck Special."
"Spring Special."
"Potato Manure."
"Plow Brand."
"Prosperity."
"Standard Potash."
"Harvest Queen."
"Half & Half."
"Red Cross."
"Black Cross."
"York Special."
"Wheat Special."
"Dissolved Phosphate."
"German Muriate of Potash."
"German Sulphate of Potash."
"Dempwolf's High Grade Tankage."
"German Kainit."

HENRY S. ZOOK, ELVERSON, PA.
"No. 7 Pride of Chester Wheat Corn & Potato Phosphate."
"No. 6 Pride of Chester Phosphate for general use."
"No. 5 Pride of Chester Corn, Oats & Wheat Phosphate."



SPECIAL NOTICE.

This Department expects to continue the publication, early in each year, of a list of fertilizer manufacturers who have complied with the law of this State by filing with the Department the required analysis and paying the legal license fee, together with the trade names of the several brands for which such fees have been paid, so that dealers may be able to avoid making themselves liable to prosecution.

The policy of the Department for some time in the past was to bring prosecutions against manufacturers, where it was possible to reach them, rather than against local dealers who are found selling unregistered goods, or goods that in other respects fail to meet the requirements of the law.

It was found, however, that in pursuing this method exclusively, we were sometimes subject to long delays before cases brought, came to trial, and as our witnesses are agents and chemists of the Department who are liable to change, it sometimes happened that before the cases were listed for trial they had gone to some other field and their presence in Court could not be secured.

For this reason prosecutions, when necessary, are now being instituted either against the manufacturers or persons selling goods that do not comply with the law as we may elect.

N. B. CRITCHFIELD,
Secretary of Agriculture.

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Commonwealth of Pennsylvania.

DEPARTMENT OF AGRICULTURE: DAIRY AND FOOD DIVISION

BULLETIN No. 206

HARVARD COLLEGE LIBRARY

PRELIMINARY REPORT

OF THE

DAIRY AND FOOD COMMISSIONER

FOR THE YEAR 1910

N. B. CRITCHFIELD, *Secretary of Agriculture*   JAMES FOUST, *Dairy and Food Commissioner*

Published by Direction of the Secretary

HARRISBURG:
C. E. AUGHINBAUGH, PRINTER TO THE STATE OF PENNSYLVANIA
1911

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LETTER OF TRANSMITTAL.

Harrisburg, Pa., December 31, 1910.

Hon. N. B. Critchfield,

Secretary of Agriculture.

Dear Sir: I have the honor to submit herewith a preliminary report of the Dairy and Food Division of the Department of Agriculture for the year ending December 31, 1910. It covers the operations for the year and contains some details that may be useful for public information.

I have the honor to remain,

Very respectfully,

JAMES FOUST,

Dairy and Food Commissioner.

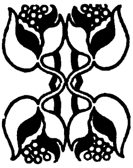
PREFACE.

In view of the fact that the full Report of the Department of Agriculture for the year 1910, containing the Reports of the several Divisions of the Department will not be ready for distribution for some weeks, the Dairy and Food Commissioner has, in recent preceding years, furnished the Head of the Department with the following preliminary report; in order that this information may be promptly made available to the public, its issue, as a bulletin of the Department, is authorized.

The more detailed report of the operations of the Dairy and Food Bureau will appear in the regular Annual Department Report.

N. B. CRITCHFIELD,

Secretary of Agriculture.



PRELIMINARY REPORT OF THE DAIRY AND FOOD COMMISSIONER.

PRELIMINARY REMARKS.

The work of every governmental department which has been some time established includes, of necessity, a large amount of work continuously performed upon the same class of subjects and by methods little changed because of their proven efficiency.

During the year past, this Bureau has continued the examination of food products for sale in the State, for the purpose of determining their conformity to the requirements of the general and special food laws enacted by the Legislature. While the kinds of material examined and the various kinds of abuse in the trade which we have sought to discover are the same as those which have occupied the attention of the Bureau in the years immediately preceding, so that in many of its aspects the work exhibits a strong similarity to that covered in the preceding reports of the Bureau, careful consideration of the facts developed during 1910 will discover many articles newly examined and certain important abuses of recent detection. These will be made the subject of special comment in later paragraphs.

It is a matter of gratification that the public interest in and support of the work of the Bureau have not only been maintained, but have steadily increased. When first enacted, the food laws were received by many intelligent citizens with some doubt as to their wisdom and necessity. The doubt regarding their wisdom grew largely out of the fact that the prime responsibility for sales of adulterated and misbranded foods was placed upon the retailer and it was very generally questioned whether it was either wise or fair to fix the responsibility at this point in the chain of transactions extending from the factory to the hands of the purchaser. The public has, however, come generally to understand that the difficulty of securing adequate proof against the jobbers and manufacturers made it necessary to require of the retailer the acceptance of the large responsibility imposed by the law, and that he correspondingly take measures to protect himself by increased care in the purchase of the supplies which he selects for distribution to his customers. The public education upon the methods of food manufacture, the nature of the raw material employed therein and the serious character of the frauds which have, in earlier years been perpetrated upon the buying public, has dis pelled the doubt as to the necessity of such legislation and has made clear the principle that the man who makes a business of manufacturing on a large scale the foods used to maintain the vigor and health of the people, occupies a position of trust in many respects differing from that held by the housewife who prepares the foods for home consumption.

These changes in the public attitude have appeared, not only among those who are interested solely as consumers, but also among those who are charged with the judicial proceedings under the Acts governing the sale of foods, whether as courts, members of the bar, or jurymen; and, most gratifying of all, the leaders in food production and distribution have come to recognize not only their responsibility, but their full measure of accountability to the public for the manner in which they carry out their part in the important work of feeding the nation. This change in attitude and growth in the sense of responsibility is apparent in the proceedings of nearly all the organizations of food manufacturers and dealers.

The extent of public information upon food subjects at the present day, as compared with that of a decade ago, is almost a matter for surprise. To the discovery and spread of this information many agencies have contributed. Most conspicuous of all these agencies has been the public press, to whose live and aggressive support of all measures looking to the more perfect control of food production and distribution a large degree of admiration is due.

The success of the Bureau's work, must in the end, be judged, not by the number of samples purchased and analyzed, the number of violations of law discovered, or the number of cases prosecuted to a successful issue, important as all these steps are as means to the main end. The true measure of the success of this branch of the State's governmental activities is to be found in the improvement of food commodities sold on the markets, both with respect to their purity and to the truthfulness of labels under which they are sold. As we review the conditions during the year past, we are satisfied that, while there is still great room for improvement in some directions and on the part of some producers and dealers, the condition of the food trade as a whole is one of steady improvement.

The work of every such administrative agency is, if successfully conducted, of an educational character. Many abuses against which the public protests, have had their origin in manufacturing practices long since established. The demand that such practices be discarded and replaced by unobjectionable processes seems entirely natural and reasonable to the consumer. The producer, on the other hand, naturally sees the facts from another view point; perceives in many cases no satisfactory alternative method for the operation whose previous methods are under condemnation, or realizes that the rejection of older procedure and the adoption of some substitute may involve a very large modification of his factory and a correspondingly great expense to himself. He is at first impelled by self interest to doubt the need for the change urged, to excuse the process by the inadequacy or unproven efficiency of other methods, to plead that he is compelled to present methods by competition, particularly from competitors in localities where the legal requirements are less exacting, and to demand, as the least consideration to which he is entitled, ample time for the discovery and trying out of new methods for the production and packing of the food products condemned. There are facts on both sides of such cases deserving of serious consideration. The Dairy and Food Commissioner is, however, charged by law and obliged by his oath of office to execute and not to make the law. He has faithfully endeavored to warn all parties concerned of the requirements of the law, so that their manufacturing and distributing work might be carried on with the fullest realization of the law's requirements, but he has consistently refused to grant immunities or extensions of time for compliance with the law, where the law has not specifically conferred discretion in such matters upon him.

There is another matter of administrative policy which it may be helpful to mention. The terms of both the general and special food Acts are in many respects broad rather than specific. Wherever the method of the Legislature has been by definition of an offence, such as the adulteration or misbranding of commodities and there has been no definition of the commodity, questions necessarily arise involving the interpretation of the Act as applied to particular commodities, or, in the case of injurious substances, as to what substances should be classed as such, or, even with reference to substances specifically prohibited by name, or as to the meaning of the name and the character of the products included within its scope. It has been the judgment of the Commissioner, after very careful thought, that the prime consideration that should govern his decisions relative to such questions is the spirit and intent of the law. In other words, that it is not the function of the executive officer to give to such Acts their narrowest construction, but that instead, he should take such action as to bring to judicial determination all questions of importance raised by any reasonable construction of the Acts committed to him for execution. For otherwise, instead of serving as the defender of the consumer, he becomes an obstruction to the reaching of a judicial determination upon such questions. In the statements just made, it is not intended to imply that the Dairy and Food Commissioner does not have a duty to perform toward that part of the public which is engaged in the production and distribution of foods as well as to that part which is interested solely in the buying of such commodities, but merely to express his obligation to bring to judicial determination all questions.

relating to food statutes, that are of sufficient importance to require such determination where the evidence obtained by the Bureau's agencies makes possible a satisfactory presentation of the question from the consumer's point of view. It has been the endeavor, however, where questions of this kind have arisen for determination, to bring mooted questions to a decision in such manner as to be fair both to the producer and distributor, on the one hand, and to the consumer, on the other.

THE MONTHLY BULLETIN.

The Monthly Bulletin of the Bureau has served during the past year, as during the preceding years, as the means of giving to the public current information concerning the work of the Bureau, and the policy originally adopted by which it was made a medium not only of statements concerning the statistical work of the Bureau, but also of general information on the subject of food production and food control, has been continued.

The demand for these Bulletins and the general interest with which the public has received them have continued in such degree as to prove their value for the purpose stated.

SUMMARY OF WORK FOR THE YEAR 1910.

In the Appendix to this report are presented summaries showing the list of articles purchased by the agents and analyzed by the chemists of the Bureau during the year, and also a table giving a list of those classes of articles found adulterated and misbranded and made the bases of prosecutions that have been terminated during the year. The recapitulation of samples analyzed shows a total of nearly 5,600 samples and a sum total of cases terminated of 667. The number of samples analyzed is somewhat less than that reported for the year 1909, but the difference is found chiefly in the number of milk samples taken during the past year. Reasons for this difference will be given in the later paragraph in which the results of the present year's work are considered in detail. The number of instances of misbranding and adulteration found during the past year is about 130 less than in 1909, judging by the lists of cases terminated during these respective years.

A comparison of the number of cases terminated for violation of the laws with the number of samples analyzed, as compared with the corresponding figures for 1909, seems to indicate an increase of adulteration. A careful analysis of the statements relative to the several classes of materials indicates that this statistical method of judgment is not entirely warranted. It is believed, on the contrary, that, as has been indicated in the introductory remarks, the conditions of the market show, on the whole, a steady improvement.

In the following portion of this report the several classes of food products examined will be considered separately in detail.

DAIRY PRODUCTS.

There have been analyzed during the year 1,777 samples of milk as compared with 2,866 examined in the year 1909.

This year the chemists' findings resulted in prosecutions of which 70 were terminated, while in 1909 the number of similar cases terminated was 126. The greater number of prosecutions this year have been for the skimming of milk sold for whole milk. About half as many prosecutions were instituted for the addition of water and, out of the entire number of samples examined, but 5 cases were discovered in which preservative was added, 4 of them having been found to contain formaldehyde and one a boric acid preservative. The condition of the milk sold in Pennsylvania, considered as a whole, shows a very marked improvement with respect to its adulteration, over the conditions existing until very recently.

CREAM.

During 1910, 499 samples of cream were analyzed, of which 27 were found illegal, all but one of them because of a deficiency in butter fat. In 1909, 1,078 samples of cream were analyzed. A number of adverse findings given in the Summary of that year are included in the present list of samples condemned under the milk Acts, so that the conditions of the two years under consideration cannot be precisely determined by comparing the figures in the respective Summaries. The facts at command warrant, however, the statement that for this commodity also there has been a distinct improvement in the grade of material offered for sale under the name of "cream."

CONDENSED MILK.

During 1910 there were examined 16 samples of products sold as condensed milk, evaporated milk and evaporated cream. These examinations resulted in the finding of but one case in which it appeared that condensed skimmed milk had been sold under the name of the corresponding whole milk product.

ICE CREAM.

There were examined in 1910, 288 samples of preparations of this class, including a few articles sold under the names "frozen custard", "milk balls", etc. These examinations led to 62 prosecutions for violations of the Act. Three-fourths of the condemnations were due to failure of the ice creams to come up to the fat standards fixed by law. In other cases, the grounds of prosecution were chiefly the addition of artificial coloration, but in a few instances, the addition of sulphurous acid and other ingredients deleterious to health. In 1909, there were examined 227 samples of this class with the discovery of 39 violations of the law, a less proportion than was found during the present year. A careful consideration of all the facts indicates, however, that this increase is only apparent and that the principal volume of the ice cream made in the State by reputable producers conforms well to the present legal requirements. As a result of the experience of preceding years, the examination of ice cream sold by street vendors and by producers of low priced ice creams received particular care, and four-fifths of the prosecutions were for sales made by push cart men, largely of foreign birth, who were selling ice cream cones and similar ice cream preparations to young children.

As a matter of fact, the ice cream law of Pennsylvania is remarkably lenient and any one now guilty of making or selling as ice cream an article that does not meet its requirements, is absolutely without excuse.

CHEESE.

Eleven samples of cheese have been examined during the past year without the discovery of any violation of the cheese law. This condition of affairs, which has continued for a number of years, is highly satisfactory.

BUTTER.

During 1910, 938 samples of butter were analyzed, of which but 13 were condemned, the specific findings in four cases being the presence of a foreign fat and excessive amount of water, and, in three cases, that of an excessive amount of water alone.

RENOVATED BUTTER.

In recent years the volume of sales of renovated butter in Pennsylvania has been very limited. Only one sample was analyzed, but five cases were successfully terminated for the selling of renovated butter without a license on samples purchased in 1909.

OLEOMARGARINE.

Two hundred and eighty-three samples were purchased in 1910 and analyzed by the Bureau chemists. Of these, but 30 were condemned because sold as and for butter. This exhibits an increased compliance with the State law that requires a proper branding of oleomargarine. In addition to these, there were 158 prosecutions for selling colored oleomargarine. The difficulty has earlier been noted of obtaining convictions where the sole ground of indictment was the sale of oleomargarine so made as to resemble yellow butter. The difficulty has not decreased during the present year although the utmost pains have been taken in the production of evidence by the most competent witnesses and in the marshalling of evidence by the Bureau's attorneys; a large fraction of the cases brought to a successful termination were those in which proof was produced that the color was due to the introduction of artificial dye stuffs. The serious point of difficulty in securing convictions has been in those cases where the resemblance to yellow butter was, so far as the facts could be demonstrated, due to the selection of high colored fats and to the more or less abundant use of butter as an ingredient in the article. While the volume of oleomargarine sales has, under the present condition of prices for food products, shown a marked increase, it is worthy of note that the sale of white oleomargarine is greater today than it has been at any time since the present oleomargarine act was passed.

There seems to be an impression on the part of a portion of the public that the laws of the State are intended to prohibit the sale of oleomargarine, whereas the contrary is the fact. The law recognizes that oleomargarine properly made and kept free from such appearance as tends to confuse it with normal butter, is a wholesome and unobjectionable food. The law does, however, prescribe for the protection of the consumer certain requirements,—that the sale shall be properly licensed, that the article shall be kept free from resemblance to yellow butter, and that the packages shall be properly stamped with the true trade name of the product. It is the violation of these regulative requirements that has led to the large number of prosecutions for illegal sales of this product. The law is clear and not only makes it an offence to sell oleomargarine as and for butter, but also to make and sell at all oleomargarine resembling yellow butter, no matter how wholesome such product may be.

MEAT PRODUCTS.

During 1910, there were examined 257 samples of meats and fish, canned and fresh, including sausages. With respect to all but the latter meat product, the examination revealed no adulteration. About 17 samples of sausages and 3 of minced ham were, however, found adulterated, in most instances by the addition of starch and water and in one case by the use of a sulphite preservative. The great difference in the price of starch and water on the one hand and of meat on the other, makes it extremely desirable, for the protection of the buying public, that the needless use of starch and the unlimited addition of water should be stopped.

LARD.

There were examined during the past year 20 samples and there were five cases successfully terminated because of adulteration with foreign fats. The operation of the lard act has resulted in a very marked improvement of the trade in this commodity.

EGGS.

Thirty-seven samples of eggs have been examined during the present year. The list of cases terminated for violation of the egg act was 44, of which a considerable number represented samples examined during 1909. Public sentiment has vigorously supported this law and the position taken by the courts has been strongly condusive to a careful regard for the law's provisions. It is recognized that, with all reasonable care, under existing conditions of production, there will be the unwitting collection and sale of some eggs that are unfit. Due care has, however, been taken that prosecutions should be instituted only in such cases as exhibit a large proportion of spoiled eggs in the consignment examined.

FRUIT AND VEGETABLE PRODUCTS.

CANNED FRUITS AND VEGETABLES.

Two hundred and fifteen samples of canned fruits and vegetables and 7 of canned soups have been examined during 1910 without the discovery of any violations of the law. Upon this remarkable showing the packers of canned goods are to be congratulated, both for their spirit of faithful observance of the law's requirements and for recognition of the business wisdom of so doing.

CATSUPS, ETC.

Of catsups, chowchow, oils and salad dressings 129 samples were examined and 19 prosecutions successfully terminated for violations of the law. The prosecutions were limited to tomato catsups and the chief ground for prosecution was the excessive use of benzoate of soda. There was but one case in which an article sold as olive oil was found to contain cotton seed oil. This formerly prevalent form of adulteration has been almost entirely suppressed.

It may be added in this connection that there were, of the prosecutions terminated during the year, 123 cases in which adulteration of pickles was claimed, in most cases owing to the evidence of the presence of alum. The precise determination of the aluminium compound used in hardening pickles is a matter of very great difficulty. In the food act of May 13, 1909, the addition of alum is prohibited. In the case of the Commonwealth vs. Meyer Gross, tried in Dauphin county, the construction of this word as used in the act was presented for judicial determination and the arguments for its broad and narrow constructions were ably presented by both sides to the controversy. In his decision, Judge Allison O. Smith, specially presiding, handed down an opinion to the effect that the word alum, as used in the act of May 13, 1909, means only potash alum and not the sodium aluminium compound designated in the wholesale trade as "S. A. S.", which is commonly used in what are called "alum baking powders," nor other closely related aluminium sulphate salts often known, whether in scientific or technical writings, as "alum".

In view of the evidence and decision just referred to, the special counsel for the Commonwealth, Hon. Lyman D. Gilbert, A. H. Woodward, Esq., and Hon. E. E. Beidleman, have advised the Commissioner that it cannot be successfully contended that the substance "S. A. S." is alum in the statutory meaning of that word. In view of the analytical difficulties of determining, upon examination of the product, the precise nature of the compound in which the alumina and sulphuric acid found in pickles, were introduced, it is deemed impracticable to bring to a successful termination prosecutions based upon evidence now obtainable of the introduction of alum into pickles, for in the case of pickles, even though all the constituents that unite to form potash alum be discovered by the chemist, it is impossible, since potash is always present in the vegetable, and varies in the proportion present therein, to prove that the potash found was introduced into the pickles in association with the alumina and the sulphuric acid in the form of potash alum.

FRUIT BUTTERS, JAMS, JELLIES, PRESERVES.

Of this important class of products, 74 were examined during 1910 without the discovery of any violations of the act. In the list of prosecutions terminated, there appear two cases instituted because of the use of sulphurous acid in the preparation of dried peaches. These prosecutions were instituted under the Act of 1907, but failed of successful termination for the reason that the Act was declared unconstitutional and later repealed by the Act of 1909.

In the same connection, may be mentioned the examination of five samples of fruit syrups of which number three were found to be adulterated and prosecutions successfully terminated for violations of the law.

VINEGAR.

There were examined in 1910, 25 samples of vinegar, most of which were sold as cider vinegar, and six cases were successfully prosecuted for adulteration. There is still on sale a considerable volume of spurious vinegar sold as if derived from pure apple juice. The variety of adulteration that has arisen in this manufacture shows a resourcefulness that would be admirable in a better cause. The difficulty of the enforcement of the law has been increased in this class of cases by the expectation on the part of the public that the evidence should not only prove conclusively that the article is not what it claims to be, but also that it should suffice to establish what the article really is. It is fair to ask why more should be expected in the way of proof than the presentation of conclusive evidence that the article does not correspond to the name under which it was sold.

BAKERY PRODUCTS.

There were analyzed in connection with the work of the year, 122 samples of biscuit, cakes, pies and puddings. The examination revealed very few instances of adulteration, but those which were discovered were of peculiar interest. Seven samples of "frou frou wafers", an imported product, were found to contain a boric acid preservative. A number of samples of ice cream cones were examined, owing to the discovery elsewhere of adulteration by the use of saccharin instead of sugar, and the introduction of boric acid, probably in the eggs used as an ingredient. One or two cases were found in which boric acid was present, but in general these products were found free from the adulterations mentioned.

In the case of cakes, 15 cases were terminated in which the ground of indictment was the presence of coal tar dye as a coloring matter. One pie filler was found adulterated in a similar manner.

A thickener used in the preparation of ice cream, whipped cream, etc., was composed in part of a product prepared from soap bark and containing detectible quantities of the poisonous substance, saponin.

In this connection may be mentioned the examination of 20 samples of corn starch, buckwheat and wheat flours, baking soda and baking powder. The flours were not found adulterated. The baking powders, belonging to the class commonly known as alum powders, under the findings in the case of the Commonwealth vs. Meyer Gross already referred to, have by the decision of the court been taken out of the class of goods prohibited by the act, as a sodium aluminium compound is commonly used in the preparation of such baking powders.

CANDY.

Three hundred and thirty-six samples of candy were examined during the year. Very few instances of adulteration were discovered and but five cases of violations of the law were terminated, although several are now pending.

FLAVORING EXTRACTS.

Forty samples of materials sold as flavoring extracts, essences, or flavorings, were examined during the year and three cases successfully terminated for violations of the act. These findings show a very distinct improvement both in the quality of the articles now offered as flavoring extracts and also in the truthfulness of the labels under which they are sold.

NON-ALCOHOLIC DRINKS.

During 1910 there were examined 278 samples of non-alcoholic drinks and 68 cases were successfully terminated, a portion of which were based upon findings made in 1909. This class of products has been wonderfully improved and the manufacturers of these beverages have shown a most laudable disposition to comply strictly with the requirements of the law except in the two large cities Everywhere else the use of saccharin, formerly almost universally used as a substitute for sugar, has been abandoned. Among the cases of special interest in this connection may be mentioned those in which capsicum (red pepper) was used to add to the pungency of ginger ales. The Department insists that this adulteration shall be stopped and the sale of such preparations shall be discontinued unless the presence of the added pungent substance be declared upon the labels.

MISCELLANEOUS PRODUCTS.

Of the 161 materials, a great variety were examined. Deserving of especial mention are those of maple syrup (28 samples with the discovery of but one case of misbranding); and nuts, of which, in a good many instances, a large proportion of those purchased were wormy or decomposed. From the presentation of the evidence, the action of the Department in instituting prosecutions for such violations of the act, was clearly sustained.

FINANCIAL STATEMENT.

A classified statement of the receipts and expenditures of the Bureau for the year 1910 is presented in the Appendix, showing total receipts to the amount of $110,802.95 and a total expenditure of $79,661.65. Of the receipts, over $79,000 were from oleomargarine license fees; over $15,000 from fines imposed for the violation of the oleomargarine law.

The statement shows that the receipts, all of which have been turned into the State Treasury for the use of the Commonwealth, have been considerably more than the entire cost of maintaining the Bureau during that time.

CONCLUSION.

In the performance of the large volume of work described in the foregoing paragraphs, the Commissioner has been greatly indebted for encouragement and advice given by the Governor of the Commonwealth, Hon. Edwin S. Stuart, and the Secretary of Agriculture, Hon. N. B. Critchfield. He desires to acknowledge also the hearty co-operation given to him by the Attorney General's Department, and to express his appreciation of the efficient and loyal assistance of the special agents, the chemists, special counsel and office force of the Bureau.

JAMES FOUST,
Dairy and Food Commissioner.

APPENDIX.

SUMMARY.

The following gives a list of articles analyzed by Chemists of this Bureau during the year 1910.

Article.	Number Analyzed.
DAIRY PRODUCTS:	
Butter,	938
Cheese,	11
Cream,	499
Milk,	1,777
Milk, skimmed,	47
Milk, butter,	8
Milk, condensed,	7
Milk, evaporated,	7
Cream, evaporated,	2
	3,296
OLEOMARGARINE,	283
RENOVATED BUTTER,	1
EGGS, (Dried and in the shell),	37
BAKING POWDER, BAKING SODA, CORNSTARCH AND FLOUR:	
Baking powder,	10
Baking soda,	1
Cornstarch,	3
Flour, buckwheat,	5
Flour, wheat,	1
	20
BISCUITS, CAKES, PIES AND PUDDINGS:	
Biscuit, Fabrick,	3
Biscuit, Frou Frou,	16
Biscuit, Snowflake,	1
Biscuit, Uneeda,	1
Cake, Candy Pound,	1
Cake, Chocolate Lady Fingers,	1
Cake, Fig,	1
Cake, Jelly,	1
Cake, Marble,	1
Cake, Marshmallow Ginger,	1
Cake, Marshmallow Pound,	1
Cake, Marshmallow Sponge,	1
Cake (no name given),	5
Cake, Pound,	3
Cake, small,	2
Cake, Sponge,	7
Cream Puffs,	1
Foamoline,	2
Gelatine,	2
Jello,	2
Nabiscos,	2
Pie, Apple,	15
Pie, Apricot,	2
Pie, Berry (no name given),	6
Pie, Blackberry,	1
Pie, Cherry,	1
Pie, Cocoanut Custard,	4
Pie, Egg Custard,	6
Pie, Huckleberry,	3
Pie, Lemon,	10
Pie, Lemon Custard,	1
Pie, Lemon Meringue,	1
Pie, Peach,	9
Pie, Raisin,	5
Pie Filler (Lemon),	2
Tapioca,	1
	122

SUMMARY—Continued.

Article.	Number Analyzed.
CANDY:	
Candy Apples,	1
Candy Balls,	1
Candy Bananas,	1
Candy, Chocolate,	97
Candy, Chocolate Coated Almonds,	11
Candy, Chocolate Bars,	9
Candy, Chocolate Buds,	1
Candy, Chocolate Caramels,	3
Candy, Chocolate Coated Cocoanut,	1
Candy, Chocolate Coated Cross,	1
Candy, Chocolate Creams,	8
Candy, Chocolate Drops,	30
Candy, Chocolate Eggs,	2
Candy, Chocolate Coated Filberts,	1
Candy, Chocolate Kisses,	13
Candy, Chocolate Maple,	1
Candy, Chocolate Maraschino Cherries,	1
Candy, Chocolate Mint Drops,	3
Candy, Chocolate Orange Creams,	1
Candy, Chocolate Coated Peanuts,	8
Candy, Chocolate Slabs,	3
Candy, Chocolate Wafers,	17
Candy, Cocoanut Eggs,	1
Candy, Easter Eggs,	1
Candy, Eggs, Green,	1
Candy Eggs, Pink,	2
Candy Eggs, White,	1
Candy Figs,	1
Candy, French Nougets	1
Candy Fruit Eggs,	1
Candy, Fudge, White,	1
Candy, Gum Drops,	4
Candy Gum, Spiced,	1
Candy Lemon,	1
Candy, Marshmallows,	42
Candy, Marshmallow Bananas,	1
Candy, Marshmallow Bars,	1
Candy, Marshmallow Blocks, Chocolate coated,	8
Candy, Marshmallow Cocoanuts,	2
Candy, Marshmallow Clams,	1
Candy, Marshmallow Cream Squares,	1
Candy, Marshmallow Dainties,	1
Candy, Marshmallow Drops,	•1
Candy, Marshmallow Drops, Chocolate coated,	2
Candy, Marshmallow Eclairs,	1
Candy, Marshmallow, "Exposition Bars,"	1
Candy, Marshmallow Gems,	1
Candy, Marshmallow Lemons,	2
Candy, Marshmallow Oysters,	1
Candy, Marshmallow Porkers, Chocolate coated,	1
Candy, Marshmallow Pumpkins,	1
Candy, Marshmallow, Vanilla,	2
Candy, Mixed,	2
Candy (no name given),	81
Candy Orange,	1
Candy, Peanut Brittle,	1
Candy, Peppermint,	2
Candy Rabbit,	1
Candy Relishes,	1
Candy, Violet,	1
Candy, Whipped Caramel Drops,	1
	386
CANNED FRUITS AND VEGETABLES:	
Apricots,	1
Asparagus,	3
Beans, baked,	4
Beans, string,	8
Blackberries,	1
Cherries,	11
Cherries, Creme de Menthe,	1
Cherries, Maraschino,	15
Corn,	27

SUMMARY—Continued.

Article.	Number Analyzed.
CANNED FRUITS AND VEGETABLES—Continued.	
Figs,	1
Gherkins, sour,	7
Gherkins, sweet,	9
Mincemeat,	13
Mushrooms,	15
Olives,	7
Parsnips,	1
Peaches,	2
Peas,	36
Pickles, cucumber,	18
Pickles, mixed,	3
Pickles, spiced,	6
Pie Fruit (cherry flavor),	1
Pineapple,	5
Plums,	3
Sauer Kraut,	2
Strawberries,	1
Succotash,	2
Tomatoes,	11
	215
CATSUPS, OILS, SALAD DRESSING, SAUCES, ETC.:	
Catsup (no name given),	11
Catsup, Tomato,	60
Catsup, Walnut,	1
Chow Chow,	1
Horseradish,	4
Oil, cooking,	20
Oil, Olive,	19
Oil, Palm,	1
Oil, Peanut,	1
Oil, Salad,	6
Salad Dressing,	1
Sauce, Bohemian,	1
Sauce, Challenge,	1
Sauce, Chilli,	2
	129
FRUIT BUTTERS, JAMS, JELLIES AND PRESERVES:	
Butter, Apple,	3
Butter, Peanut,	5
Jam (no name given),	4
Jam, Plum,	1
Jam, Plum and Apple,	1
Jam, Quince,	3
Jam, Raspberry,	1
Jam, Strawberry,	2
Jam, Strawberry and Apple,	1
Jelly, Apple,	15
Jelly, Apple and Currant,	3
Jelly, Apple and Pineapple,	2
Jelly, Crabapple,	6
Jelly, Currant,	4
Jelly (no name given),	4
Jelly, Quince,	1
Jelly, Strawberry,	1
Jelly, Wine,	1
Preserves, Blackberry,	1
Preserves, Cherry	2
Preserves, Damson,	1
Preserves, Lingon,	1
Preserves (no name given),	8
Preserves, Pineapple,	1
Preserves, Plum,	1
Preserves, Raspberry,	2
Preserves, Strawberry,	4
Preserves, Tomato,	1
	74

SUMMARY—Continued.

Article.	Number Analyzed.
FLAVORINGS, ESSENCES AND EXTRACTS:	
Flavoring, Lemon,	1
Essence, Lemon,	2
Extract, Almond,	1
Extract, Banana,	1
Extract, Lemon,	14
Extract, Orange,	1
Extract, Peach,	1
Extract, Raspberry,	1
Extract, Strawberry,	5
Extract, Vanilla,	13
	40
FRUIT SYRUPS:	
Cherry,	1
Strawberry,	4
	5
ICE CREAMS:	
Ice Cream, Caramel,	2
Ice Cream, Cherry,	1
Ice Cream, Chocolate,	26
Ice Cream, Maple,	2
Ice Cream, Marshmallow,	1
Ice Cream (no flavor given),	27
Ice Cream, Orange,	1
Ice Cream, Peach,	12
Ice Cream, Pineapple,	3
Ice Cream, Strawberry,	49
Ice Cream, Tutti Fruitti,	1
Ice Cream, Vanilla,	150
Ice Cream, Walnut,	3
Frozen Custard,	3
Lemon Ice,	1
Milk Balls,	5
Strawberry Klondike Frost,	1
	288
LARD,	20
MEATS AND FISH—CANNED AND FRESH:	
Bacon, Fresh,	2
Bacon and Beans,	1
Beef, Corned,	2
Beef, Chipped, Dried,	8
Beef, Sliced,	4
Beef, Sliced and Smoked,	1
Beef, Stewing,	1
Bologna,	25
Bologna, Beef,	5
Bologna, Ham,	2
Chicken, Boneless,	1
Chicken, Fresh,	1
Chops (no name given),	1
Clams,	1
Codfish,	4
Codfish, Dried,	1
Codfish, Shredded,	5
Deviled Crabs,	1
Fish Flakes,	1
Fish Roe,	1
Frankfurters,	18
Ham,	2
Ham, Minced,	4
Ham, Potted,	1
Ham, Pressed,	2
Hamburger Steak, fresh,	13
Herring, Boneless,	7
Herring, fresh,	1
Liverwurst,	2
Liver Blood Sausage,	1
Lobster, Canned,	2
Lobster Flake,	1
Mackerel, Salt,	1
Oysters, canned,	10
Oysters, fresh,	8

SUMMARY—Continued.

Article.	Number Analyzed.
MEATS AND FISH—CANNED AND FRESH—Continued.	
Pork and Beans,	5
Potted Meats (ham flavor),	3
Round Steak, fresh,	1
Salmon, canned,	9
Salmon, fresh,	1
Sardines,	4
Sausage, Fresh,	26
Sausage, Fresh Pork,	19
Sausage, Polish,	1
Sausage, Smoked,	4
Sausage, Half-Smoked,	2
Sausage, Vienna,	1
Sausage, Wiener,	52
Shrimps,	2
Soup Bone,	1
Tongue,	1
	257
NON-ALCOHOLIC DRINKS:	
Bittermead Beverage,	1
Birch Beer,	22
Cherry Punch,	1
Cherry Smash,	4
Cider, Sweet,	1
Cola Coke,	1
Coca Cola,	3
Ginger Ale,	25
Grape Juice,	15
Grapemist,	1
Jersey Creme,	3
Lemonade,	3
Lemon Sour,	5
Liquid Force,	2
Mineral Water,	1
Moxie,	1
Noxem-All,	1
Orangeade,	5
Pepsicola,	1
Phosphate, Cherry,	2
Phosphate, Orange,	1
Pop, Birch,	1
Pop, Blackberry,	1
Pop, Cream,	1
Pop, Dark,	1
Pop, Lemon,	4
Pop (no name given),	1
Pop, Orange,	1
Pop, Peach,	1
Pop, Raspberry,	1
Pop, Strawberry,	13
Pop, Vanilla,	2
Pop, White,	1
Red Colwa,	1
Root Beer,	6
Strawberry, artificial,	2
Sarsaparilla,	11
Soda, Cherry,	1
Soda, Chocolate,	3
Soda, Cream,	13
Soda, Lemon,	10
Soda (no name given),	74
Soda, Orange,	4
Soda, Pineapple,	2
Soda, Raspberry,	2
Soda, Strawberry,	20
Soda, Vanilla,	1
Soda, Vanilla and Tonka,	1
	278
SOUPS:	
Soup, Chicken,	3
Soup, Condensed Bouillon,	1
Soup, Tomato,	2
Soup, Vegetable,	1
	7

SUMMARY—Continued.

Article.	Number Analyzed.
VINEGAR:	
Vinegar, Cider,	23
Vinegar, Red,	2
	25
MISCELLANEOUS PRODUCTS:	
Almonds,	1
"Beat It,"	1
Blush Rose Color,	1
Celery Tonic,	1
Cordial, Cherry,	1
Cordials (no name given),	5
Chestnuts,	7
Chocolate,	3
Cocoa,	8
Cocoanut, Shredded,	1
Color for Strawberry Ice Cream,	1
Cones for Ice Cream,	29
Cracker Meal,	1
Cream Powder,	1
Cream Nuts,	6
Cough Drops,	1
Fig Bars,	1
Fig Paste,	1
Frosted Oranges,	1
Frozen Dainties,	1
Glucose,	1
Grape Fruit,	1
Honey,	9
Ice Cream Filler,	2
Jelly Sugar Dessert,	1
Lemons,	1
"Make Cream,"	1
Maple Sugar,	3
Meat Preservative,	1
Mixed Nuts,	5
Mustard, German,	1
Mustard, prepared,	3
"Napoleons,"	1
Oranges,	1
Peanuts, burnt,	1
Pecans, Maraschino,	1
Pickled Pigs Feet,	1
Pickled Tripe,	1
Pigs Feet Jelly,	1
"Sorbetto,"	1
Sugar Butter Mixture,	1
Sugar Wafers,	1
Syrup, Corn,	2
Syrup, Maple,	28
Syrup, Table,	1
Walnuts, English,	16
Whipped Cream,	1
Whip E. Z.,	2
	161

RECAPITULATION.

Butter,	938
Cheese,	11
Cream,	499
Milk,	1,848
Oleomargarine,	283
Renovated Butter,	1
Eggs,	37
Fruit Syrups,	5
Ice Cream,	288
Lard,	20
Non-Alcoholic Drinks,	278
Vinegar,	25
Food,	1,361
Total,	5,594

CASES TERMINATED.

THE FOLLOWING TABLE GIVES A LIST OF ARTICLES ANALYZED BY CHEMISTS AND FOUND TO BE IN VIOLATION OF THE FOOD LAWS, THE NUMBER OF SAMPLES OF EACH PRODUCT ON WHICH PROSECUTIONS WERE BASED AND TERMINATED, AND THE TOTAL AMOUNT OF FINES AND COSTS ACCRUING.

Number of samples.	Article	Fines and costs.
1	"Beat It," containing saponin,	$60 00
1	Birch Beer, adulterated and containing saccharin,	25 00
1	Biscuit Fabrick, containing boric acid,	60 00
2	Bologna, containing added starch,	120 00
1	Bologna, Polish, adulterated,	60 00
6	Butter, adulterated,	60 00
3	Butter, containing an excessive amount of water,	125 00
4	Butter, containing a foreign fat and an excessive amount of water,	120 00
2	Buttermilk, artificially colored,	60 00
1	Cake, artificially colored,	60 00
14	Cake, containing coal tar color,	312 50
2	Catsup, adulterated,	120 00
2	Cherry Smash, misbranded,	25 00
1	Cherry Phosphate, misbranded,	25 00
1	Chestnuts, unfit for food,	60 00
1	Condensed Skimmed Milk, as milk,	20 00
1	Cones, colored and sweetened with saccharin,	60 00
2	Cooking Oil, colored with annatto,	120 00
4	Cooking Oil, colored with coal tar dye,	240 00
1	Cornstarch, adulterated,	00 00
1	Cream, adulterated,	20 00
26	Cream, below standard for butter fat,	405 00
5	Cucumber Pickles, adulterated,	322 56
4	Eggs, unfit for food (under Act of 1907),	72 50
40	Eggs, unfit for food (under Act of 1909),	3,105 00
1	"Exposition Bars" (candy marshmallows) containing sulphurous acid,	60 00
2	Frankfurters, adulterated,	120 00
1	French Peas, containing compounds of copper,	60 00
4	Frou Frou, adulterated,	120 00
2	Frou Frou, containing borates,	120 00
1	Frou Frou Wafers, containing boric acid,	60 00
1	Frozen Custard, containing coal tar dye,	25 00
3	Fruit Syrup, adulterated,	00 00
1	Gelatine, containing sulphurous acid,	60 00
1	Gherkins, Sweet, adulterated,	00 00
4	Ginger Ale, containing capsicum,	75 00
1	Grape Juice, watered,	25 00
1	Grape Nuts, misbranded,	00 00
4	Ice Cream, adulterated,	101 06
5	Ice Cream, artificially colored,	125 00
28	Ice Cream, below standard for butter fat,	650 00
2	Ice Cream, below standard for butter fat and artificially colored,	50 00
1	Ice Cream, containing ingredient deleterious to health,	60 00
5	Ice Cream, containing sulphurous acid,	125 00
1	Ice Cream, misbranded,	60 00
2	Ice Cream, Chocolate, low in fat,	50 00
2	Ice Cream, Chocolate and Vanilla, low in fat,	25 00
1	Ice Cream, Peach, artificially colored,	25 00
1	Ice Cream, Strawberry, colored and low in fat,	25 00
9	Ice Cream, Vanilla, below standard for butter fat,	225 00
1	Ice Cream Cones, low in fat,	25 00
1	Ice Cream Filler, containing saponin,	60 00
2	Lard, adulterated	100 00
1	Lard, Compound, containing less than 50 per cent. lard,	50 00
1	Lard, containing beef stearin,	00 00
1	Lard, containing cotton seed product and beef fat,	50 00

CASES TERMINATED—Continued.

Number of samples.	Article	Fines and costs.
1	Lemon Extract, misbranded,	60 00
1	Lemon Syrup, misbranded,	60 00
1	Maple Syrup, misbranded,	60 00
3	Maraschino Cherries, adulterated,	180 00
1	Maraschino Cherries, containing sulphurous acid,	60 00
4	Marshmallows, containing sulphurous acid,	180 00
1	Milk, adulterated,	20 00
1	Milk, artificially colored,	60 00
21	Milk, containing added water,	438 98
1	Milk, containing boric acid,	50 00
4	Milk, containing formaldehyde,	107 50
17	Milk, low in butter fat,	242 50
24	Milk, skimmed, as and for whole milk,	481 50
3	Minced Ham, containing added starch,	188 02
24	Oleomargarine, as and for butter,	1,696 00
106	Oleomargarine, colored,	7,521 20
3	Oleomargarine, colored, sold as and for butter,	300 00
29	Oleomargarine, colored, and selling without a license,	1,510 81
6	Oleomargarine, colored, sold as and for butter and without a license,	600 00
4	Oleomargarine, colored, and not stamped,	291 00
45	Oleomargarine, selling without a license,	2.524 06
1	Oleomargarine, selling without a license and peddling,	100 00
1	Oleomargarine, selling at wholesale without license,	19 46
1	Oleomargarine, selling at wholesale without license and colored,	8 96
5	Oleomargarine, in resemblance of yellow butter,	300 40
8	Oleomargarine, not properly placarded or stamped,	100 00
1	Oleomargarine, colored and not stamped (second offense),	485 00
3	Oleomargarine, colored (second offense),	00 00
1	Olive Oil, containing cottonseed oil,	60 00
1	Onions, Pickled, containing alum,	60 00
1	Orange Soda, artificially colored and misbranded,	25 00
2	Peaches, preserved with sulphurous acid (under Act of 1907),	00 00
1	Peanuts, coated with a shellac-like varnish,	60 00
1	Pie Filler, containing non-permitted coal tar dye,	60 00
16	Pickles, adulterated,	683 28
1	Pickles, containing alum,	00 00
1	Pickles, containing an excessive amount of benzoate of soda,	60 00
2	Pickles, Mixed, containing alum,	60 00
1	Pickles, Sweet Mixed, adulterated and preserved,	00 00
1	Pork and Beef Sausage, Fresh, preserved with sulphurous acid,	200 00
1	Potatoes, decomposed,	00 00
1	Raspberry Sparkler, misbranded,	25 00
5	Renovated Butter, selling without a license,	97 00
5	Sausage, adulterated,	296 40
9	Sausage, containing added starch and water,	480 00
2	Soda Water adulterated,	50 00
1	Soda Water, artificially colored,	50 00
3	Soda, colored with a coal tar dye,	80 00
47	Soda, sweetened with saccharin,	750 00
1	Soda, sweetened with saccharin and colored with a coal tar dye,	27 50
1	Strawberry Extract, misbranded,	00 00
1	Strawberry Extract, unwholesome and deleterious to health,	60 00
1	Strawberry Klondike Frost, containing coal tar color,	26 00
1	Strawberry Pop, containing saccharin,	25 00
1	Strawberry Soda, artificially colored and containing saccharin,	50 00
14	Tomato Catsup, adulterated,	851 28
3	Tomato Catsup, containing an excessive amount of benzoate of soda,	187 84
1	Tongue, tainted,	60 00
6	Vinegar, Cider, adulterated,	248 50
1	"Whip E Z," containing saponin,	60 00
667		$30,405 84

NUMBER OF CASES TERMINATED DURING THE YEAR 1910 AND THE ACT UNDER WHICH SAME WERE PROSECUTED.

Oleomargarine act, 1901,	231
Renovated butter act,	5
Food act, 1907,	8
Food act, 1909,	143
Milk act, 1901,	5
Milk act, 1909,	90
Lard act, 1909,	5
Vinegar act, 1901,	6
Non-alcoholic drink act, 1909,	67
Ice cream act, 1909,	63
Meat act (fresh), 1905,	1
Fruit Syrup act, 1905,	3
Egg act, 1909,	40
Total,	667

FINANCIAL STATEMENT.

RECEIPTS AND EXPENDITURES OF THE DAIRY AND FOOD BUREAU FOR THE YEAR 1910.

RECEIPTS.

Oleomargarine license fees,	$79,697 11
Oleomargarine fines,	15,456 92
Pure food fines, act of 1909,	6,626 88
Egg fines,	3,105 00
Milk fines, act of 1909,	1,627 98
Ice cream fines,	1,476 06
Non-alcoholic drink fines,	1,237 50
Renovated butter license fees,	700 00
Vinegar fines,	248 50
Lard fines,	200 00

Milk fines, act of 1901,	157 50
Meat fines,	100 00
Renovated butter fines,	97 00
Pure food fines, act of 1907,	72 50
	$110,802 95

EXPENDITURES.

Special agents' salaries,	$20,592 00
Traveling and agents' expenses,	17,865 91
Chemists and laboratory,	16,958 35
Attorneys, detectives and assistants,	15,816 39
Clerical and stenographers,	8,429 00
	$79,661 65

THE TURNING OVER OF SAMPLES.

An important opinion of Bell, J., Blair county, in the case Commonwealth *vs.* J. A. Koller, *et al,* in re. rule to show cause why portions of samples taken by the Commonwealth should not be turned over to defendants for analysis.

IN THE COURT OF QUARTER SESSION OF BLAIR COUNTY.

Commonwealth
vs.
J. A. Koller et al.

In re. rule to show cause why portions of sample taken by the Commonwealth should not be turned over to defendants for analysis.

BY THE COURT: "So far as the rule for a bill of particulars is concerned, as ruled by the Supreme Court in Commonwealth vs. Powell, 23 Sup. Ct. 372, a bill of particulars in a criminal case is not a matter of right, but is only an appeal to the sound discretion of the court. My recollection is that in some of the pure food indictments in cases tried in this Court there was simply an allegation in the indictment that the pure food act had been violated, without specifying the particular violation. I am inclined to think that that indictment was perfectly good. We have our act of Assembly which provides that an indictment shall be deemed sufficient which simply follows the words of the act of Assembly, and if this indictment had simply followed the words of the act of Assembly, and been in the general form with which we found other indictments we would feel it but right and proper that the Commonwealth should specify the particular article of food which was supposed to be adulterated and at least specify in a general way how that particular article of food was adulterated; but in the present instance the particular article of food is specified, to wit, chocolate, and there is a general statement as to how it is adulterated. I think we will all agree on a moment's reflection that the rulings of the appellate courts on this subject are perfectly right and proper. The authority cited by Mr. Baldridge is not an analogous authority at all. In the first place, as stated by Mr. Woodward, the physical examination to which the plaintiff is compelled to subject himself is always made—and I am speaking only as to the orders of—

is always in the presence of the physician of the plaintiff. I have drawn frequent orders compelling plaintiffs in damage cases to submit to physical examinations, but I was always careful to provide that the physician of the plaintiff should be present so that no unfair advantage could be taken of the plaintiff, and that everything that was done there was done in the presence of the physician of the plaintiff. But it seems to me that the endeavor to liken a civil proceeding to a criminal proceeding is fallacious, and that is the vice of the offer. In a civil proceeding the plaintiff may be compelled to subject himself to a physical examination. At the same time he has the mutual and co-ordinate right of compelling defendant to disclose his case. Not so in a criminal case. The defendant can hold all the papers in his possession, and there is no power to compel him to produce them. He can sit on the witness stand and say I have a paper at home, and the Court is powerless to make him produce evidence to establish his guilt. That is one reason. In the second place a civil suit is tried on the weight of the evidence. Each party comes in with an equal right to be heard as to the measure of proof, but in a criminal suit the burden is on the Commonwealth to establish the case beyond a reasonable doubt and these maxims of ours about the reasonable doubt that the jury must come to the firm, unwavering conviction that the defendant is guilty, have come to us from times when judges were wont to hang a man for stealing a loaf of bread. Now I do not say in the present criminal procedure that we should get away from these old maxims, but I do say that while we adhere to those old maxims, which we adopted when they hung men for stealing a loaf of bread, such maxims ought not to be applied against the Commonwealth on the one side and then on the other hand the Commonwealth be compelled to disclose all their case, and the absence of precedent to my mind is strong proof that there is no warrant for a court compelling the Commonwealth to submit their evidence in advance to the defendant. It does seem to me that the able criminal lawyers who have defended criminals charged with grave offenses if there was any warrant for such a precedent would have brought it in force. Take for instance a murder case. The Commonwealth claiming that they found on the prisoner a bloody shirt, and that the blood stains are human blood, not chicken blood, or blood which he received butchering a hog, but human blood; now we all know that the experts on the part of the defense coach the lawyers for the defense while they cross examine the experts of the Commonwealth, but I do not think there would be any warrant for a defendant charged with murder to say you must tear that shirt in two and you must give my chemist one-half of the alleged blood stains so that they can prepare a defense; or, to put it more mildly, that they can have the alleged blood stains analyzed. I do not know of any such precedent, and the very fact that Mr. Baldridge, after diligent search, has been unable to find one to my mind is proof that there is no warrant to force the Commonwealth to produce the evidence they are going to submit. As I said before, in a civil suit, under certain equitable rules, each side must apprise the other side of what evidence they are going to use, but I do not think it would be fair to say to the Commonwealth you must give the defendant all your side of the case so that he can examine and ransack it, and at the same time allow the defendant to keep his mouth shut. It seems to me that would be giving a defendant an unfair advantage, and it seems to me it would be unfair to compel the Commonwealth to allow a defendant to subject their samples to examination in advance, and I will overrule the application for the compelling of the production of such samples. As to experiments in open court I do not know to what extent I will go about a matter of that kind. I did rule in the formaldehyde cases where Mr. Hicks wanted to take a drink of the preservative, and wanted the Court to take a drink of it, and let the jury take a drink of it, I did rule that he could take a drink, but the Court would not, and would not have the jury do so. Mr. Hicks was going to turn the Court into a laboratory, and I think we said we would not have any laboratory here in court. I do not know to what extent I would go if there was an effort on the part of the defendant to examine samples by microscopic tests—I will leave that matter open."

I hereby certify that the foregoing is a correct transcript of the opinion of the Court in the case of Commonwealth *vs.* J. A. Koller *et al.*, in re. rule for turning over of portion of sample taken by Commonwealth.

J. F. MECK,

Official Stenographer Courts of Blair County.

LIST OF CREAMERIES IN PENNSYLVANIA AS PUBLISHED BY THE PENNSYLVANIA LIVESTOCK BREEDERS' ASSOCIATION.

Adams Co.
Bermudia, ...B. D. Hostetter
Cashtown, ..Cashtown Creamery Co., L. W. Swartz, Manager
East Berlin, E. Berlin Creamery Assn.
East Berlin, ...J. D. Hershey
Gettysburg, ... Jerry J. Plank
Gurnsey, ...John Geiger
Latimore, ..Latimore Creamery Co., Jos. Lerew, President
New Oxford, ...J. Diller & Co.
Allegheny Co.
Wilkinsburg, ..Bright View Dairy Co.
Armstrong Co.
Cochran's Mills, ...Cochran's Mills Creamery
Dayton, ...Dayton Co-op. Creamery Assn.
Top, ...King & Woodward
Whitesburg, ...Whitesburg Creamery Blaney & Sons, Props.
York Springs, ...B. D. Hostetter
Beaver Co.
Hookstown, ...Hookstown Creamery
Bedford Co.
Rainsburg, ...George Morgart
Berks Co.
Bally, ...Frank Janson
Bechtelsville, James Meyer and Bro.
Berne, ...Levi M. Miller
Bernville, ...Ahrens & Richardson
Bernville, ...Bernville Creamery Co.
Bethel, ...Ahrens & Richardson
Bowers, ...Bowers' Creamery Co.
Boyertown, ..Grimm's Mill Creamery
Boyertown, ...Boyertown Creamery
Calcium, ...Calcium Creamery
Calcium, ...Cleaver & Hoffman
Clayton, Clayton Butter & Cheese Co.
Crosskill Mills, Ahrens & Richardson
Douglasville, ...Charles Buckwalter
Eshback's, ...Hines Bros.
Exeter Station, ...H. B. Levan & Co.
Fleetwood, ...Fleetwood Creamery
Fleetwood, ...Daniel Kelchner
Hancock, ...Hancock Creamery
Hamburg, ...N. A. Confer
Huff's Church, ...Nathan Lesher
Kempton, ...M. L. Ritter
Kempton Station, Howard G. Kimmel Excel'r Dairymen's Assn.
Klinesville, ...Klinesville Creamery
Kutztown, ...Kutztown Creamery
Landis' Store, ..Joseph Boyer & Bro.
Lenhartsville, ...B. F. Levan
Lime Kiln, ...Oley Line Creamery
Little Oley, ...Fritzer's Creamery J. P. Thomas, Prop'r
Lyons Station, ...Jno. G. Haring
Manatawney, Pleasantville Creamery
Mertztown, ... F. Moyer & Co.
Mohrsville, ...Isaac S. Fraunfelter
Morgantown, ...Jacob Hartz
Morgantown, .Morgantown Creamery
New Berlinville, Gilbertville Creamery
New Berlinville, ...Congo Creamery
New Berlinville, ...W. H. Moyer
New Jerusalem, ...J. S. Henrich
North Heidelberg, .Klapp & Kalback
North Heidelberg, ..Klopp's Creamery
Obold, ...Kalbach & Obold
Oley, ...Freidensburg Creamery
Oley, ...Hartman & Bros.
Reading, ...Franklin St. Creamery
Reading, ...St. Lawrence Creamery
Reading, ...Spang & Zacharias
Rehrersburg, ..Ahrens & Richardson
Rehrersburg, ..Rehrersburg Creamery
Shartlesville, ..Ahrens & Richardson
Shoemakersville, ...Shoemakersville Creamery
Stonersville, ...Ahrens & Richardson
Straustown, ...Ahrens & Richardson
Topton, ...A. S. Heffner
Upper Bern, ...Levi M. Miller
West Leesport, ..Samuel H. Lenhart & Son
Windsor Castle, ...M. L. Ritter
Yellow House, ...Amos Hartman
Yellow House, ...Home Creamery
Blair Co.
Tyrone, ...Hoffman Bros. Creamery
Henrietta, ...Elmer S. Berget
Bradford Co.
Alba, ...Alba Butter Mfg. Co.
Allis Hollow, Allis Hollow Creamery Co.
Allis Hollow, Union Creamery Co., Ltd.
Austinville, ..Austinville Co-operative Creamery Co.
Brad, ...Wyalusing Creamery
Cadis, ...J. W. Prince
Camptown, ...Fuller & Blocker
Canton, ...Odee Creamery Co.
Canton, ...Glenside Creamery
Columbia Cross Roads, ..Austinville Creamery Co.
Coryland, ...Coryland Creamery
Durell, ...Durell Creamery
East Canton, Silverdale Creamery Co.
East Smithfield, ...D. A. Stephen
East Troy, East Troy Butter Mfg. Co.
Grover, ...S. S. Vermilya
Le Raysville, ...W. B. Stevens
Milan, ...Pennsylvania Creamery Co.
Minnequa, ...James Ketcham
Myersburg, M. Butter and Cheese Co.
New Albany, New Albany Creamery Co.
North Orwell, ...George Pennell
North Orwell, ...Baker Brothers
Potterville, ..Potterville Creamery Co.
Potterville, Orwell Creamery Co., Ltd.
Smithfield, ...Stevens Creamery
Sayre, ...Harkness Creamery
South Warren, ...Best and Wheaton
Stevensville, .Stevensville Association
Troy, ...S. H. Heywood
Bucks Co.
Argus, ...C. T. Hixon
Bedminster, ...Bedminster Creamery
Bedminster, ...J. F. Hulsheiser
Bedminster, ...J. F. Kilmer
Bedminster, ...Moyer & Hulshiser

Bucks Co.
Blooming Glen, ...Blooming Glen Creamery
Blooming Glen, ...Pleasant Springs Creamery
Buckingham, Blooming Valley Creamery
Buckingham, Blooming Valley Dairymen's Assn.
Bucksville, ...Kasier & Kramer
Bursonville, ...Hixon & Mills
Carversville, ...Carey Betz
Carversville, ...C. Roberts
Chalfont, ...Chalfont Creamery
Chalfont, ...A. H. Faust & Co.
Church Hill, ..Church Hill Creamery
Church Hill, ...Jos. Guldin
Cressman, ...Milton H. Hickle
Danborough, ...Ottsville Creamery
Doylestown, ..Cold Spring Dairy Co.
Dublin, ...Dairymen's Assn.
Erwinna, ...George Scott
Forest Grove, Forest Grove Creamery
Gardenville, ...Gotwals & Son
Geryville, ...Krausdale Creamery
Jamison, Warwick Township Creamery
Keller's Church, .Wilson S. Atherholt
Levin, ...Frank Hetrick
Makefield, ...Makefield Creamery
Milford Square, ...Henry G. George
Milford Square, ...A. H. Moyer
Neshaminy, ...W. W. Carr
Nockamixon, F. M. Moyer Via Ferndale
Nockamixon, ..Nockamixon Creamery
Ottsville, ...Aaron Leatherman
Passer, ...J. H. Shelly
Perkasie, ...Henry O. Moyer
Piperville, ...A. M. Gerhart
Pleasant Valley, ..Dimlin & Gerhart
Pleasant Valley, ...J. H. Shelly
Plumsteadville, Plumsteadville Creamery Assn.
Quakertown, ...C. T. Hixon
Quakertown, ...William S. Taylor
Richlandtown, Keller's Church Cream.
Richardville Centre, .Landis & Moyer
Richlandtown, Richlandtown Creamery
Shelly, ...Henry B. Weiss
Solebury, ...Solebury Dairy Assn.
Spinnerstown, ...Dairymen's Assn.
Springtown, ...Hixon & Mills
Steinburg, ...O. H. Erdman
Tohickon, ...J. D. Stover
Trumbauersville, ...Sinking Springs Creamery
Wismer, ...Union Dairy Association
Zion Hill, ...Henry B. Weiss

Butler Co.
Conoquenessing, ..Stern & Dumbaugh
Portersville, ...H. Oliver
Portersville, Portersville Creamery Co.
Prospect, ...Prospect Creamery Co.
Saxonburg, Saxonburg Elgin Creamery
Slippery Rock, Slippery Rock Creamery Co.

Cambria Co.
Carrolltown, ...Farmer's Creamery

Carbon Co.
Little Gap, ...W. M. Benninger

Centre Co.
Bellefonte, ...Rock Farms Creamery
Bellefonte, ...Howard Creamery Cor.
Howard P. O., ...C. M. Muffley
Rebersburg, ...Frank & Stover
Rebersburg, Spring Mills Creamery Co.
Spring Mills, Spring Mills Creamery
State College, State College Creamery

Chester Co
Anselma, ...Pikeland Creamery
Avondale, ...Lamborn's Creamery
Brandywine Manor, .Reid's Creamery
Buck Run, ...Ercildoun Creamery
Cedar Knoll, ...Lafayette Creamery
Chadd's Ford, .E. Darlington & Bro.
Chesterville, ...Marvell Bros.
Cochranville, ...Cochran Creamery
Cochranville, .Cochranville Creamery
Collamer, ...Isaac Evans
Collamer, ...W. Evans & Son
Collamer, ...E. B. Herr
Cossart, ...Brandywine Creamery
Cossart, ...James B. Pyle
Doe Run, ...H. A. Clark
Doe Run, ...Darlington Creamery
Doe Run, ...Milton Darlington
Doe Run, ...H. A. Taylor
East Coventry, ...East Coventry Creamery
Elk View, ...Dr. Quimby
Elk View, ...T. Thomas Webb
Embreeville, ...J. L. Cunningham
Fairville, ...Sharpless Creamery
Font, ...Fairmont Creamery
Glen Roy, ...E. B. Herr
Hickory Hill, Hickory Hill Creamery
Homerville, ...Collamer Dairy
Honeybrook, ..C. D. & P. H. Emery
Honeybrook, Pennsylvania Creamery
Kelton, ...S. Morris Jones
Keinberton, ...Fry & Barr
Kembleville, ...Byers' Creamery
Kembleville, ..Klembleville Creamery
Kennett Square, Bernard's Creamery
Kennett Square, ...Kennett Square Creamery
Kennett Square, ...Wm. Sharpless
Landenburg, ...Alfred Sharpless
Lenover, ...H. S. Boyd
Leonard, ...Rosedale Creamery
Lincoln University, ...Niewig Bros.
Londonderry, ...J. H. Donald
London Grove, ...J. C. Sharpless
Marsh, ...Marsh Creamery
New Garden, .New Garden Creamery
New London, ...Frank Kirk
New London, .Theodore Kirk & Son
Nottingham, Nottingham Co-operative Creamery
Oxford, ...Big Elk Dairies
Oxford, ...Hill Crest Creamery
Oxford, ...H. D. & E. A. Pugh
Oxford, ...Geo. D. Woodside & Co.
Parksburg, ...Cochran Creamery
Phoenixville, ...Red Bank Creamery
Pughtown, ...D. Wadleigh
Pomeroy, ...M. Darlington Sons
Roberts, ...Thomas Hatfield & Son
Russellville, ..Russellville Creamery
St. Peters, ...Farmers' Creamery
Schuylkill, ...Schuylkill Creamery
Sheeder P. O. James C. Roberts & Son
Sheeder, ...Vincent Creamery
Spring City, ..Spring City Creamery
Supplee, ...Enterprise Creamery
Toughkenamon, ...Josiah Lamborn
Toughkenamon, ...Wm. Sharpless
Tweedale, ...E. B. Herr
Unionville, ...Unionville Creamery
Vincent, ...Brindlinger Bros.
Vincent, ...E. B. Gasher

Vincent, ...R. Heistand
Wagontown, ...J. H. Schrock & Son
Wagontown, ...Harry Schrack
Wagontown, ...West Cain Creamery
Warwick, ...Marst Creamery
West Chester, ...Allerton Creamery
West Vincent, ...Lewis H. Evans
West Chester, ...Harper Creamery
West Chester, George Faucetts & Son
West Chester, ...Wm. B. Harvey
West Chester, ..Homestead Creamery
West Chester, West Chester Creamery
West Chester, ...West Chester Dairy
West Chester, ..E. Roberts' Creamery
Whitford, ...Whitford Creamery
Whitford, ...Arnold M. Wilber
Williams' Corners, Chas. Buckwalter
Williams' Corners, Morris Mackissic
Willowdale, ...Willowdale Creamery
Wrightsdale, ..Wrightsdale Creamery

Crawford Co.
Beaver Centre, ...Clark & Gates
Conneautville, ...J. W. Clark
Centreville, ...Centreville Creamery
Beaver Centre, ..Green, Clark & Co.
Crossingville, .Crossingville Creamery
Dicksonburg, ...T. S. Layer
Espyville, ...A. W. Wall
Frenchtown, ...Augustus Polley
Guys Mills, ...L. C. McGraw
Jewell, ...Jewell Cheese Factory Co.
Jewell, ...N. O. Stanford
Hickernell, ...Hickernell Creamery
Lincolnville, ...Lincolnville Creamery
Linesville, ...A. B. Griffin
Long's Stand, ...A. J. Miller
Meadville, Leon C. McGraw Cheese Co.
Miller's Station, ...L. C. McGraw
Penn Line, ...L. C. McGraw
Pinney Corners, ...D. H. Nodine
Rundell's ....McGraw & Cooper
Saegerstown, ...A. B. Long
Saegerstown, ...Long & Reiche
Spartansburg, ...Concord Creamery
Spartansburg, ...Hyde and Baker
Springboro, ...J. J. Howard
Townville, ...A. L. Squier
Troy Centre, ...Grove & McDowell
Troy Centre, .Troy Centre Creamery
Westford, ...J. S. Martin
Westford, ...Hart Espy
Woodcock, ...Sherrod & Norris

Clarion Co.
Callensburg, ...Callensburg Creamery
Lickingville, ...Pioneer Creamery Co.
Marble, ...Enterprise Creamery
Newmansville, .Pioneer Creamery Co.

Clearfield Co.
Clearfield, ...Clearfield Creamery Co.
Clearfield, ...James Mitchell

Clinton Co.
Clintondale, Clintondale Creamery Co.
Loganton, ...Loganton Creamery
Salona, ...Salona Creamery

Columbia Co.
Berwick, ...Fairview Creamery
Millville, ...Millville Creamery

Cumberland Co.
Allen, Cumberland Valley Creamery Co.
Allen, ...John Hoemer
Boiling Springs, ...Wm. H. Kunkel
Carlisle, ...Letort Creamery
Craighead, ...B. W. Hasler
Hatton, ...Keystone Creamery
Mechanicsburg, ...Cumberland Valley Creamery
Mechanicsburg, ...Mechanicsburg Creamery
New Kingston, ...Cumberland Valley Creamery
Newville, ...Big Springs Separator
Shippensburg, ...D. B. Biggs & Son
Shippensburg, ...Jacob Reigle
Williams' Mills, ..Cumberland Valley Creamery Co.
Williams' Mills, ...Geo. Umberger

Dauphin Co.
Berrysburg, ...Peter L. Stine
Deodate, ...Ezra C. Foltz
Fisherville, ...Cornelius Bixler
Fisherville, ...Fisherville Creamery
Grantville, ...Stauffer & Rapp
Harrisburg, ...S. F. Barber
Hummelstown, ...Model Creamery
Millersburg, ...C. F. Moyer
Powl's Valley, ...C. Bixler & Son
Progress, ...John H. Sheesly
Swatara, ...Conewago Creamery
Union Deposit, ...Stauffer & Rapp

Delaware Co.
Brandywine Summit, Miller & Heyburn
Chadd's Ford, ..E. Darlington & Bro.
Cheney, ...Thomas Cheney
Cheney, ...Frank G. Thomas
Concordville, ...P. E. Sharpless
Darling, ...Darlington Creamery
Darlington, ..M. F. Darlington & Son
Villanova, ...Villanova Creamery
Wallingford, ...Wallingford Creamery
Wallingford, ..Wallingford Dairy Co.
Ward, ...Pennock E. Sharpless

Elk Co.
Ridgway, ...Ridgway Creamery Co.
St. Mary's, ...St. Mary's Creamery

Erie Co.
Albion, ...W. S. Boyle
Corry, ...Corry Creamery
Corry, ...J. C. Wales
Edinboro, ...Lavery & Co.
Elgin, ...Pier Willard
Ferdinand, W. Union Cheese Factory
Franklin Corners, ...Frank Billings
Greenfield, ...Greenfield Butter and Cheese Co.
Ivasea, ...Population Cheese Factory
Itley, ...William Marsh
Juva, ...Barnes & Lockwood
Lavery, ...J. S. Lavery
LeBoeuf, ...C. M. Wheeler
Lovell's Station, ...Crowells McGray
Loysville, Dickinson, Gilbert & Keen
McLane, ...Wm. Marsh
Mystic, ...J. H. Waterhouse
Ovid, ...Mark L. Howard
Phillipsville, ...Alfred Moore
Pont, ...R. B. Gates
Sterrettania, ...Joseph H. Haach
Sterrettania, ..Sterrettania Creamery
Tellar, ...C. D. Faulkner
Union City, ...Geo. W. Carroll
Wattsburg, ...F. W. Edmunds
Wattsburg, ...Keystone Creamery Co.
Waterford, ...Sharps Creamery
Waterford, ...J. H. Brogdon
Wattsburg, ...Pratt Bros.
Waterford, ...Vananden & Gillit
Waterford, ...O. H. Wells

Fayette Co.
East Riverside, ...M. R. Jacobs
Farmington, ...Cheese Factory
New Haven, New Haven Butter Co.

Franklin Co.
Chambersburg, ...Hanover Creamery
Chambersburg, ...Chambersburg Creamery
Edenville, ...Franklin Creamery Co.
Green Village, ...H. Foglesonge
Green Castle, ...F. W. Kulin
Green Village, Green Village Creamery
Lemaster's, ...J. R. Lemaster & Son
Marion, ..Cumberland City Creamery and Dairy
Markes, ...J. R. Lemaster & Son
Mercersburg, ..Mercersburg Creamery Co.
Shady Grove, ..Nicodemus Creamery Assn.
Waynesboro, Blue Mountain Creamery
Waynesboro, ...A. L. Schailer
Waynesboro, ...Chas. H. Stickel
Williamson, ...Williamson Farmers' Co-operative Creamery
Williamson, Williamson Creamery Co.
Willow Hill, ...McCurdy & Elder

Fulton Co.
McConnellsburg, ...W. L. Sloan
McConnellsburg, ...McConnellsburg Creamery

Greene Co.
Carmichaels, ..Carmichaels Creamery

Huntingdon Co.
McAlevy's Fort, . McAlvey's Fort Creamery
Morrell, Morrell Butter and Cheese Co.
Neff's Mills, ...Neff's Mills Creamery
Pennsylvania Furnace, Hoffman Bros.

Indiana Co.
Elder's Ridge, Co-operative Creamery Co.
Homer City, ...H. C. English
Homer City, ..Homer City Creamery

Jefferson Co.
Sugar Hill, ...J. N. Atwell & Co.

Juniata Co.
Cocolamus, ...Brown & Co.
East Salem, ...S. Schlegal
East Salem, ..East Salem Creamery
McAllisterville, Shellenberger & Hambright
McCoysville, ...B. C. Cubbleson
Mifflintown, ...J. G. Haldeman
Port Royal, ...Port Royal Creamery
Thompsontown, ...J. G. Haldeman

Lackawanna Co.
Glenburn, ...Enderly Dairy
La Plume, ...Scranton Creamery
Moscow, ...Moscow Creamery
Scranton, ...Wm. Conrad
Scranton, ...E. S. Decker

Lancaster Co.
Bainbridge, ...Coday Creamery
Bart, ...Bart Creamery
Bethesda, ...Bethesda Creamery
Bird-in-hand, .Bird-in-hand Creamery
Bird-in-hand, ...F. Bowman
Blue Ball, ...S. H. Musselman
Buck, ...Buck Creamery
Cambridge, ...Cambridge Creamery
Cambridge, ...E. J. & P. H. Emery
Cambridge, ...George I. Emery
Christiana, ...Christiana Creamery
Cocalico, ...Cocalico Creamery
Colemanville, ...George Garrett
Collens, ...Herr & Maul
Denver, ...Daniel Gebble
Elizabethtown, ...Elizabethtown Creamery
Ephrata, ...J. H. Yeiser
Fairland, ...John Reist
Farmsville, ...Henry J. Shaffer
Fertility, ...Fertility Creamery Co.
Florin, ...Florin Creamery
Furniss, ...C. P. Grigg
Gap, ...Gap Creamery Co., Ltd.
Glenola, ...Johnsonville Creamery
Glenola, ...H. M. Stauffer
Goshen, ...The Elam Dairy Co.
Goshen, ...Goshen Creamery
Goshen, ...Amos Walton
Hahnstown, ...John Fry's Sons
Kirkwood, ...Ezra Hess
Kirkwood, ...Graybill Stone
Lancaster, ...Lancaster Dairy Co.
Landisville, ...Levi H. Hershey
Landisville, ...Landisville Creamery
Lititz, ...Garber Reist & Co.
Manheim, ...Hershey Bros.
Martillville, ...M. C. Eshelman
Mascot, ...Stumptown Creamery
Mastersonville, Farmers' Creamery Co.
Mastersonville, Mastersonville Creamery Assn.
May, ...Johnson & Gilbert
McSparran, ..Peter's Creek Company
McSparran, ...Willowdale Creamery
Mt. Joy, ...Farmers' Creamery Co.
Mt. Joy, ...Reist, Nissley & Son
Mount Nebo, Mt. Nebo Creamery Assn.
New Providence, ..Dickison & Gilbert.
Octararo, ...J. H. Brosius
Pleasant Grove, ...Carter & Mills
Pleasant Grove, Conowingo Creamery
Quarryville, ...Dickison & Gilbert
Quarryville, ..Quarryville Creamery
Reinhold Station, ..Reinhold Station Creamery
Smithville, Harry S. Wiggling & Co.
Smyrna, ...Smyrna Creamery Co.
Spruce Grove, ...Milton Keech
Unicorn, ...Unicorn Creamery Co.
Unicorn, ...J. E. Moore
White Rock, ...Elm Creamery Co.
White Rock, ...Wm. G. Patton
White Rock, White Rock Creamery Co.
Windom, ...Champion Creamery Co.

Lawrence Co.
Enon Valley, Enon Valley Creamery
Neshannock Falls, .Neshannock Falls Creamery
New Castle, ...Midway Butter Co.
Pulaski, ...John S. Evans
Volant, ...J. Wilken & Son

Lebanon Co.
Bellgrove, ...Cleona Creamery Co.
Campbellstown, ...Campbellstown Creamery
Cleona, ...Cleona Creamery
Fontana, ...Cleona Creamery Co.
Fredericksburg, ...L. S. Gearhart
Jonestown, ...Z. T. Gingrich
Lawn, ...Lawn Creamery Co.
Lebanon, ...City Creamery
Millbach, ...Millbach Creamery Co.
Myerstown, ...Basler Creamery
Myerstown, ...George W. Dongs
Myerstown, ...Mengle & Yost

Ono, ...L. S. Gerhart
Palmyra, Elizabethtown Creamery Co.
Prescott, ...Henry Haak
Richland Station, ...Big Spring Creamery Co.
Richland Station, ..G. E. Brownback
Richland Station, ...Henry Haak
Lehigh Co.
Alburtis, Spring Creek Creamery Co.
Allentown, ...Spring Creek Creamery
Allentown, ...Loux Creamery Co.
Catasauqua, ..Howertown Creamery
Coopersburg, ...W. H. Steininger
Coopersburg, ...Landis & Co.
Hosensack, ...L. H. Brownell
Hosensack, ...Hosensack Creamery
Lanark, ...J. C. Richard
Lyon Valley, ..Lyon Valley Creamery
Lyon Valley, ...M. C. Rollman
Macungie, ...E. M. Laux & Co.
Macungie, ...Macungie Creamery
Macungie, ...Schuler Bros.
New Tripoli, ...Miller & Gilmer
Plover, ...W. R. Schuler
Sigmond, ...Jacob Faust & Co.
Steinsville, ...Steinsville Creamery
Vera Cruz, ...Schuler Bros.
Vera Cruz, ...Vera Cruz Creamery
Wanamaker, ...John K. Fetherolf
Werley's Corner, ...O. P. Werley
Luzerne Co.
Hazleton, ...Rhone Trescott
Hazleton, ...J. M. Williams
Wilkes-Barre, Standard Dairy Co. Ltd.
Wapwallopen, Wapwallopen Co-operative Creamery Co.
Lycoming Co.
Jersey Shore, ...J. M. Harmon
Larrys Creek, ...Geo. L. Randall
Muncy, ...David Gundsum
Muncy, ...Muncy Creamery
Roaring Branch, ...E. E. Harrer
Roaring Branch, .American Creamery Co.
McKean Co.
Eldred, ...Eldred B. & C. Co.
Kane, ...Kane Creamery Co.
Myrtle, ...R. G. Wooden
Port Allegany, ..Acme Creamery Co.
Smethport, ...Naundah Butter & Creamery Co.
Mercer Co.
Greenville, ..Greenville Creamery Co.
Grove City, ..Library Grove City Coll
Grove City, ...A. H. Beatty
Indiana Run, ...T. P. Munnell
Jamestown, ...W. R. Plant
Loudon, ...Loudon Creamery Co.
Mercer, ...Louden Creamery Co.
Mercer, ...McDonaldson & Zahiser
Mercer, ..Mercer Creamery Co., Ltd.
New Vernon, ...J. A. Carey
Sharpsville, ...Sharpsville Creamery
Volant, ...S. A. Williams
Mifflin Co.
Allensville, ..Allensville Creamery Co.
Belleville, ...Belleville Creamery
Mattawana, ...Mattawana Creamery
McVeytown, ...John M. Hassinger
Reedsville, ...D. Z. Detwiler
Reedsville, ...A. L. Detweiler
Reedsville, ...Reedsville Creamery
Monroe Co.
East Stroudsburg, ...Beechpond Creamery Co.
Gilbert, ...M. G. Funk
Lamartin, ...Salem Creamery Co.
Limestone, ...Greenville Creamery
Stroudsburg, ..Stroudsburg Creamery Co.
Montour Co.
Washingtonville, Mengle & Luckenbill
Montgomery Co.
Cedars, ...J. P. Bustard
Colmar, ...Colmar Creamery
Colmar, ...John Holley
Congo, ...Congo Creamery
Creamery, ...Perkiomen Dairymen's Assn.
Earlington, ...H. C. Durstien
Earlington, ...J. G. Hunsicker
Earlington, ...John Landis
East Greenville, ...East Greenville
East Greenville, ...Adam Kraus
Fairview Village, ...Fairview Village Creamery Assn.
Franconia, ...J. N. Freed
Franconia, ..Indian Creek Creamery
Franconia, ...John K. Landis
Frederick, ...Green Tree Creamery
Grater's Ford, ...A. G. Fly
Grater's Ford, Grater's Ford Creamery Co.
Hatfield, ...Drake's Ford Creamery
Hatfield, ...Aaron Tyson
Hillegas, ...Hillegas Creamery Co.
Hoppenville, ...McLean's Creamery
Hoppenville, ...J. T. Moyer
Iron Bridge, ...Harmony Grange Creamery
Kulpsville, Towamensing Creamery Co.
Lederachville, ...Andrew T. Garber
Lederachville, Wide Awake Creamery
Lederachville, ...Worcester Creamery
Limerick, ...Garret E. Brownback
Limerick, ...Samuel Y. Eisenberg
Linfield, ...G. E. Brownback
Linfield, ...Samuel Y. Eisenberg
Linfield, ...P. J. Reifsnyder
Lucon, ...Lucon Creamery Co.
Mainland, ...Mainland Creamery Co.
Narcissa, Plymouth Valley Creamery
North Wales, ...C. W. Hoffman
Obelisk, Green Tree Dairymen's Assn.
Perkiomenville, ...J. M. Reed
Pottstown, ...S. G. Fly
Pottstown, ...Miller Bros. Creamery
Prospectville, .Prospectville Creamery Co.
Royersford, ...Mingo Creamery
Salfordville, Upper Salford Creamery
Sanatoga, ...Sanatoga Creamery
Sassmansville, Sassmansville Creamery Co.
Schwenksville, ...Willian Bromer
Schwenksville, Dairymen's Creamery Assn.
Schwenksville, ...Wm. G. Liegler
Skippack, ..Schwenksville Cry. Assn.
Spring House, ...R. R. Jones
Trappe, ...Spring Valley Creamery
Willow Grove, Willow Grove Creamery
Worcester, ..Farmers' Creamery Assn.
Yerkes, ...Yerkes Creamery
Northampton Co.
Bath, ...W. H. Landis
Benningers, W. M. Benninger & Son
Bingen, ...Campbell & Appel
Bushkill Centre, ...Bushkill Centre Creamery
Butztown, ...Butztown Creamery

Cherryville, ...L. D. Meckley
Hecktown, ...Hecktown Creamery
Hecktown, ...W. H. Landis
Hecktown, ...S. D. Steuben
Moorestown, ...H. S. Kratz
Nazareth, ...H. S. Kratz
Nazareth, ...Nazareth Creamery Co.
Petersville, ...William A. Slot
Plainfield, ...Plainfield Creamery
Stockertown, .Stockton Creamery Co.
Stone Church, ...W. M. Benninger
Stone Church, ...Jordon McIntyre
Walnut Port, ...W. M. Benninger
Weaversville, ...Dairymen's Assn.
Weaversville, ...William M. Smith
Youngs, ...Frank Young
Northumberland Co.
Chillisquaque, ...C. L. Butler
Dewart, ...Dewart Creamery Co.
Milton, Pleasant Valley Creamery Co.
Montandon, ...Cold Spring Creamery
Sedan, ...Wm. Dunn
Sunbury, ...Chas. R. Rinehart
Sunbury, ...Sunbury Creamery Co.
Perry Co.
Elliottsburg, ...E. J. Kistler
Loysville, ...Loysville Creamery Co.
Millerstown, ...J. C. Kipp
Pike Co.
Matamoras, ...Matamoras Creamery
Potter Co.
Bingham Centre, ...W. J. Clark
Bingham Centre, ...R. H. Howe
Bingham Centre, ...Richard Labor
Elmer, ...Cheese Factory
Newfield, ...W. J. Grover
Raymonds, ...E. J. Conable
Raymonds, ...W. B. Perkins
White's Corners, ...White's Corners Creamery
Schuylkill Co.
Orwigsburg, ...A. F. Kimmel
Rausch's .... Salem W. Koch
Tamaqua, ...Henry M. Enterline
Snyder Co.
Beaver Springs, Beaver Springs Cream
Globe Mills, ..Palmer & Hackenburg
McClure, ...Ulsh & Bro.
Middleburg, ...Palmer & Hackenburg
Susquehanna Co.
Alford, ...Alford Creamery
Auburn Centre, Shannon Hill Co-op. Creamery
Auburn 4 Corners, Auburn 4 Corners Creamery Co.
Birchardville, ...C. P. Ball
Birchardville, Birchardville Creamery
Birchardville, Excelsior Creamery Co.
Brooklyn ....Brooklyn Creamery
Choconut, Choconut Valley Creamery Co.
Dimock, ...Dimock Creamery Co.
East Rush, East Rush Creamery Co.
East New Milford, ..Mountain Lake Creamery Co.
Fairdale, ...Seller Bros.
Fairdale, ...C. P. Ball
Fairdale, ...Fairdale Creamery
Forest Lake, Forest Lake Creamery Co.
Franklin Forks, Franklin Forks Cream.
Gibson, ...Hartford Dairy Co.
Heartlake, ...Heartlake Creamery
Hartford, ...Hartford Dairy Co.
Hop Bottom, Hop Bottom Dairy and Milk Co.
Hop Bottom, Hop Bottom Creamery
Kingsley, Kingsley Creamery Co., Ltd.
Kingsley, ..Kingsley Union Creamery
Kingsley, ...Robinson Wollworth & Kingsley
Lawesville Centre, ..Lawesville Co-op. Creamery Co.
Little Meadows, Iron Bridge Creamery
Little Meadows, ...Little Meadows Creamery
Middletown, Iron Bridge Creamery Co.
Middletown Centre,..... Middletown Centre Creamery Co.
Montrose, ...Montrose Dairy Co.
Montrose, ...Seiler Bros.
Montrose, ...Beech Bros.
Montrose, ...Beech Creamery
Montrose, ...Silver Lake Creamery
New Milford, ..Kingsley Creamery Co.
New Milford, New Milford Creamery Co.
Rush, ...Rush Centre Creamery Co.
Rushboro, ...Treasurer
Rushboro, Jersey Hill Creamery Co.
Rushboro, ...East Rush Creamery Co.
Rushville, ...Rushville Creamery Co.
Silver Lake, ..Quaker Lake Creamery
Springville, ...Springville Creamery
South Gibson, ...Hartford Dairy Co.
Tiffany, ...Tiffany Creamery
Thompson, ...Thompson Creamery
Tioga Co.
Austinburg, ...E. A. Bean
Austinburg, ...Cheese Factory
Balsam, ...Balsam Cheese Factory
East Chatham, ...D. Avery
Elkland, ...Elkland Creamery
Elkland, ...Cheese Factory
Job's Corners, ..William G. Carpenter
Keenyville, ...A. C. Close
Keenyville, ...Cheese Factory
Knoxville, ...E. A. Dean
Knoxville, Pennsylvania Creamery Co.
Knoxville, ...Cheese Factory
Lawrenceville, Lawrenceville Creamery
Liberty, ...Worlin Miller
Liberty, Liberty Valley Creamery Co.
Little Marsh, ...W. Wass & Co.
Little Marsh, ...Cheese Factory
Mansfield, ...Pitts & Spurr
Mansfield, ...West Sullivan Creamery
Nelson, ...J. B. Campbell
Nelson, ...Nelson Cheese Factory
Nelson, Nelson Separator & Butter Co.
Round Top, ...E. A. Close
Rutland, ...Zimmer & Clark
Stony Fork, ..Stony Fork Creamery
Sylvester, ...E. O. Bean
Tioga, ...Kemp & Berg
Tioga, ...Tioga Cheese Factory
Wellsboro, ...G. B. Close
Westfield, ..Westfield Cheese Factory
Union Co.
Lewisburg, ..Buffalo Valley Creamery
Mifflinburg, Crystal Springs Creamery
Mifflinburg, Mifflinburg Creamery Co.
Venango Co.
Oil City, ...M. B. Crowther
Warren Co.
Ackley Station, ...Young & Clark
Bear Lake, ...Frank Parkhurst
Chandler's Valley, ...Valley Creamery
Columbus, ...J. U. Wells

Garland, ...Garland Cheese Factory
Grand Valley, ...Valley Creamery
Lader, ...James Curtis
Lader, ...E. S. Griggs
Lottsville, ...Vern Grigg
Spring Creek, ..Willowdale Creamery
Sugar Grove, ...Acme Creamery Co.
Sugar Grove, ...George Hampson
Youngsville, Youngsville Creamery Co.

Washington Co.
Bulger, ...Peter Hermes
Bulger, ..Ohio & Pgh. Milk Co.'s Cr'y
West Alexander, ...McCalmont & Chambers
West Alexander, Jas. A. Chambers & Co.

Wayne Co.
Ariel, ...Lakeside Creamery
Beach Lake, ...Beach Pond Creamery
Clemo, ...Clemo Creamery Co.
Gravity, ...Gravity Co-op. Creamery
Gravity, ...Georgetown Creamery
Honesdale, ..Crystal Spring Creamery
Newfoundland, Oakdale Co-operative Co.
Sulleyville, ...G. & C. Smith
Seeleyville, Silver Creek Creamery Co.
Starlight, ...Starlight Dairy Co.

Westmoreland Co.
Greensburg, ...Chicago Dairy
Mt. Pleasant, Mt. Pleasant Creamery
New Kensington, ...Willis Wonderly
New Kensington, ...New Kensington Butter Co.
Scott Haven, ...McGrew & Bros.
Smithton, ...Smithton Creamery

Wyoming Co.
Factoryville, ..Factoryville Creamery
Factoryville, ...V. R. Gardner
Laceyville, ...Horseheads Creamery
Laceyville, Bradford Co. Creamery Co.
Lemon, ...Lemon Creamery
Nicholson, ...Nicholson Creamery
Nicholson, ...L. H. Pratt
Nicholson, ...Lackawanna Dairy
North Mehoopany, ...Vaugh Bros.

York Co.
Big Mount, ...A. B. Mummert
Bridgeton, ...Bridgeton Creamery
Brodbecks, ..Brodbecks Sta. Creamery
Brodbecks, ...Miller & Bortner
Delta, ...Daniel Hollingsworth
Dillsburg, ...Dillsburg & Elgin
Dover, ...Dover Creamery
East Berlin, ...East Berlin Creamery
Felton, ...R. Grove & Brother
Gatchelville, ...Gatchelville Creamery
Glenville, ...Glenville Creamery
Hanover, ...Hanover Creamery
Hanover, ..York and Adams Creamery
Hanover, ...Hanover Produce Co.
Hanover, ...Reist, Nissley & Co.
Muddy Creek Forks, Pleasant Grove Creamery
New Freedom, ...August J. Gillen
New Park, ...New Park Creamery
New Sinsheim, ...Israel K. Ziegler
Porter's Siding, ...C. C. Wooden
Railroad, ...J. A. Wetrick
Shrewsbury, ...Shrewsbury Creamery
South Beaver St. York, ...Mr. Budd
Spring Forge, ...Wagner & Swartz
Slate Hill, Cool Spring Creamery Co.
Slab, ...C. C. Smith & Bro.
Swartstown, ..Swartstown Creamery
Wellsville, ...T. C. Cleaver

Commonwealth of Pennsylvania.

DEPARTMENT OF AGRICULTURE

BULLETIN No. 207

LIST OF

County and Local Agricultural Societies

With Names and Addresses of Presidents and Secretaries and Dates for holding Fall Exhibitions of 1911

COMPILED FROM OFFICIAL REPORTS AND SOURCES
BY

A. L. MARTIN
Deputy Secretary of Agriculture

JUNE 1, 1911—CORRECTED TO DATE

HARRISBURG:
C. E. AUGHINBAUGH, PRINTER TO THE STATE OF PENNSYLVANIA
1911.

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PREFACE.

Harrisburg, Pa., May 1, 1911.

In order to promote correspondence and co-operation so far as may be possible among the agricultural societies and fair associations of the State, this Department again gives, in the following Bulletin, No. 207, as full a list as it has been able to secure of such societies and associations within the Commonwealth, together with the names and addresses of their officers, and the dates arranged for exhibitions during the coming Fall.

It will be noticed that some of the societies given in the list do not hold exhibitions. They, however, appear in the bulletin in order that the list of associations organized for the advancement of agricultural education may be as complete as possible, and to give other associations opportunity to- correspond with them. The societies, whether holding fairs or not, are fruitful sources of good to the agriculture of the Commonwealth, and are assured of the sympathy and, as far as possible, the co-operation of this Department.

N. B. CRITCHFIELD,
Secretary of Agriculture.

LETTER OF TRANSMITTAL.

Harrisburg, Pa., May 1, 1911.

Hon. N. B. Critchfield, Secretary of Agriculture.

Dear Sir: This bulletin contains list of Local and County Agricultural and Horticultural Societies, with dates of Fairs, also Grange Exhibits, to be held in Pennsylvania during the year 1911, as reported by Secretaries representing the different organizations. The dates of certain fairs have been omitted on account of Secretaries failing to report same.

The attendance for 1910 was 1,543,473, as compared with previous year, 1,449,000, shows an increase of 94,473; total membership 13,942; amount received from State Fund, $28,351.94; amount paid in premiums, 1910, $121,225.80; amount offered in premiums, 1911, $128,075.00, an increase of $6,849.20.

Very respectfully,

A. L. MARTIN,
Deputy Secretary.

List of County and Local Agricultural Societies, with Names and Addresses of Presidents and Secretaries and Dates for Holding Fall Exhibitions of 1911, Etc.

County.	Corporate Name of Society.	Name and Address of President.	Name and Address of Secretary.
	State Horticultural Association of Pennsylvania,	Gabriel Heister, Harrisburg,	Chester J. Tyson, Floradale.
	Grangers' Interstate Picnic Association,	R. H. Thomas, Mechanicsburg,	H. S. Mohler, Mechanicsburg.
	Encampment and Fair of Patrons of Husbandry,	Leonard Rhone, Centre Hall,	Leonard Rhone, Centre Hall.
Adams,	Fruit Growers' Association of Adams County,	R. M. Eldon, Aspers,	Edwin C. Tyson, Floradale.
Allegheny,	Allegheny County Agricultural Association,	J. M. Shoup, Carnegie, R. F. D.,	H. W. DeLong, Imperial.
Armstrong,	Dayton Agricultural and Mechanical Association,	Wm. Gallagher, Dayton,	C. C. Cochran, Dayton.
Bedford,	Bedford County Agricultural Society,	Dr. S. F. Statler, Bedford,	J. Roy Cessna, Bedford.
Bedford,	Osterburg Grange Picnic Association,	S. S. Kauffman, Osterburg,	Geo. W. Oster, Osterburg.
Berks,	Kutztown Fair Association,	Chas. D. Herman, Kutztown,	C. J. Rhode, Kutztown.
Berks,	Agricultural and Horticultural Asso. of Berks County,	James McGowan, Geigers Mills,	H. Seidel Throm, Reading.
Blair,	Grange Fair Asso. of Blair County,	Dr. W. Frank Beck, Altoona,	H. S. Wertz, Duncansville.
Bradford,	Bradford County Agricultural Society,	John W. Conklin, Towanda, R. F. D. No. 5,	O. L. Smiley, Towanda.
Bradford,	Troy Agricultural Society,	Liston Bliss, Troy,	D. F. Pomeroy, Troy.
Bradford,	Wyalusing Fair Association,	S. M. Wells, Wyalusing,	G. M. Lyon, Wyalusing.
Bucks,	Bucks County Agricultural Society,	Frank W. DeLancey, Sellersville,	I. Y. Baringer, Perkasie.
Bucks,	Farmers' Picnic and Exhibition,	Jacob M. Landis, Richland Centre,	Miss Carrie Landis, Richland Centre.
Butler,	Butler Driving Park and Fair Association,	Geo. A. Schaffner, Butler,	W. B. Purvis, Butler.
Cambria,	Cambria County Agricultural Association,	W. F. Cunningham, Patton, R. F. D.	J. V. Maucher, M. D., Carrolltown.
Cameron,	Cameron County Agricultural Association,	F. X. Blumle, Emporium,	F. G. Judd, Emporium.
Carbon,	Carbon County Industrial Society,	O. F. Acker, Lehighton,	J. Albert Durling, Lehighton.
Centre,	Centre County Agricultural Exhibiting Company,		De Laun Stewart, Bellefonte.
Chester,	The Oxford Agricultural Association,	Henry Cope, Lincoln University,	Thos. F. Grier, Oxford.
Chester,	Chester County Agricultural Association,	John H. Darlington, West Chester,	Fred Durose Reid, West Chester.
Clarion,	Clarion County Fair Association,	B. W. Thompson, Clarion,	S. S. Laughlin, Clarion.
Clearfield,	DuBois Driving Association,	B. B. McCreight, DuBois,	P. O. Griesemer, DuBois.
Columbia,	Columbia County Agricultural, Horticultural and Mechanical Association.	Wm. J. Hidley, Light Street,	A. N. Yost, Bloomsburg.
Crawford,	Conneaut Lake Agricultural Association,	H. O. Holcomb, Conneaut Lake,	Chas. T. Byers, Conneaut Lake.
Cumberland,	Agricultural Association of Cumberland County,	J. Kirk Bosler, Carlisle,	W. H. McCrea, Carlisle.

Cumberland,	Hogestown Horse and Cattle Show,	Vance C. McCormick, Harrisburg,	Frank Martin, Box 547, Harrisburg.
Dauphin,	Middletown Fair Association,	Colin S. Few, Middletown,	E. Hollis Croll, Middletown.
Dauphin,	Gratz Agricultural and Horticultural Association,	Harry Smith, Gratz,	F. S. Klinger, Gratz.
Erie,	Erie County Horticultural Society,	Geo. W. Blank, North East,	A. I. Loop, North East.
Erie,	Corry Fair and Driving Park Association,	J. J. Desmond, Corry,	W. W. Morgaridge, Corry.
Greene,	Greene County Agricultural and Manufacturing Society,	G. M. Bailey, Khedive,	W. A. Ruth, Carmichaels.
Indiana,	Indiana County Agricultural Society,	M. F. Jamison, Indiana,	David Blair, Indiana.
Jefferson,	Jefferson County Agri. and Driving Park Asso.,	Samuel Arthurs, Brookville,	Richard E. Reitz, Brookville.
Juniata,	Juniata County Agricultural Society,	Chas. D. Frankhouse, Port Royal,	James N. Groninger, Port Royal.
Lackawanna,	Lackawanna County Fair and Grange Poultry Association,	John F. Lacoe, Ransom, R. F. D.,	F. L. Thompson, Schultzville.
Lancaster,	Lancaster County Agricultural Society,	P. T. Watt, Lancaster,	I. C. Arnold, Lancaster.
Lawrence,	Pulaski Fair Association,	Geo. Watson, West Middlesex,	H. H. Knox, Pulaski.
Lebanon,	Lebanon Valley Fair Association,	W. H. Bollman, Lebanon,	J. A. Bollman, Lebanon.
Lebanon,	Lebanon County Agricultural and Horticultural Asso.,	John H. Bennetch, Newmanstown, R. D. No. 1.	S. P. Heilman, M. D., Heilmandale.
Lehigh,	Lehigh County Agricultural Society,	John W. Eckert, Allentown,	Harry B. Schall, Allentown.
Lycoming,	Muncy Valley Farmers' Club,	Wm. A. Ball, Hughesville,	Edward E. Frontz, Hughesville.
McKean,	McKean County Fair Association,	R. W. Hilton, Smethport,	Guy McCoy, Smethport.
Mercer,	Mercer Central Agricultural Society,	A. J. McKean, Mercer,	John O. Orr, Mercer.
Mercer,	Mercer County Agricultural Society,	J. M. Bentley, Mercer, R. D.,	Geo. H. Fowler, Stoneboro, R. F. D.
Monroe,	Monroe County Agricultural Society,	W. C. Hood, Stroudsburg,	H. F. Coolbaugh, Stroudsburg.
Northampton,	Northampton County Agricultural Society,	C. S. Messinger, Tatamy,	J. R. Reinheimer, Nazareth.
Northampton,	Pennsylvania State Fair Association,	J. Walter Lovatt, Bethlehem,	H. A. Gorman, Bethlehem.
Northumberland,	Milton Fair and Northumberland County Agricultural Asso.,	Geo. W. Klinger, Milton,	Wm. G. Murdock, Milton.
Perry,	Perry County Agricultural Society,	T. H. Butturf, Newport,	J. C. F. Stephens, Newport.
Philadelphia,	Pennsylvania Horticultural Society,	C. B. Newbold, 511 Chestnut St., Philadelphia.	David Rust, Hort. Hall, Philadelphia.
Sullivan,	Sullivan County Agricultural Society,	M. E. Wilcox, Forksville,	O. N. Molyneaux, Dushore.
Susquehanna,	Susquehanna County Agricultural Society,	F. A. Davis, Montrose,	W. H. Turrell, Montrose.
Susquehanna,	Harford Agricultural Society,	F. A. Osborne, New Milford, R. F. D.	O. F. Maynard, Harford.
Tioga,	Cowanesque Valley Agricultural Society,	George Rumsey, Westfield,	J. W. Smith, Westfield.
Tioga,	Smythe Park Association,	John F. Pitts, Wellsboro,	R. C. Longbothum, Mansfield.
Tioga,	Tioga County Pomona Grange,	James E. Spencer, Wellsboro,	W. H. Whiting, Wellsboro, R. D. No. 4.
Union,	Union County Agricultural Society,	F. W. Getz, Lewisburg,	C. Dale Wolfe, Lewisburg.
Washington,	Union Agricultural Association,	J. E. Perrin, Independence,	D. S. Taylor, Burgettstown, R. D. No. 3.
Washington,	Sandy Plains Fair Association,	Andrew Allen, Millsboro,	B. Frank Emery, Millsboro.
Warren,	Warren County Farmers' and Breeders' Association,	J. J. Mahon, Sugargrove,	R. J. Weld, Sugargrove.
Wayne,	Wayne County Agricultural Society,	W. L. Ferguson, Seelyville,	Emerson W. Gammell, Honesdale.
Westmoreland,	Westmoreland Agricultural Society,	M. P. Shoemaker, Greensburg,	W. F. Holtzer, Greensburg.
Wyoming,	Wyoming County Fair Association,	S. R. Brungess, Tunkhannock,	F. S. Harding, Rosengrant.
York,	York County Agricultural Society,	John H. Wogan, York,	Edward Chapin, York.
York,	Hanover Agricultural Society,	C. J. Delone, Hanover,	J. B. Miller, Hanover.
York,	New Freedom Farmers' Improvement Association,	G. F. Miller, New Freedom,	W. H. Freed, New Freedom.

List of County and Local Agricultural Societies, with Names and Addresses of Presidents and Secretaries and Dates for Holding Fall Exhibitions of 1911, Etc—Continued.

County.	Corporate Name of Society.	Attendance, 1910.	Race track.	Membership.		Premiums.		Held 1911.	
				Number.	Amount received from State fund.	Paid, 1910.	Offered, 1911.	Place.	Date.
	State Horticultural Association of Penna.			500		$200 00			No fair.
	Grangers' Interstate Picnic Association,	60,000		6				Williams Grove,	Aug. 28-Sept. 2.
	Encampment and Fair of Patrons of Husbandry.	15,000		1,500	$52 00	152 00	175 00	Grange Park, Centre Hall.	Sept. 9-15.
Adams,	Fruit Growers' Asso., of Adams County,			250				Bendersville,	Dec. 13-15.
Allegheny,	Allegheny County Agricultural Asso.,		½ mile,	103	350 00			Imperial,	Not decided.
Armstrong,	Dayton Agricultural and Mech. Asso.,	22,000	½ mile,	280	400 00	1,164 45	2,500 00	Dayton,	Sept. 26-29.
Bedford,	Bedford County Agricultural Society,		½ mile,		894 95	894 95		Bedford,	Not decided.
Bedford,	Osterburg Grange Picnic Association,	15,000		75				Osterburg,	Aug. 14-19.
Berks,	Kutztown Fair Association,	18,000	½ mile,	500	323 44	1,927 65	2,200 00	Kutztown,	Sept. 26-29.
Berks,	Agricultural and Hort. Asso. of Berks County.	60,000	½ mile,	260	676 56	3,750 00	5,000 00	Reading,	Sept. 12-15.
Blair,	Grange Fair Association of Blair County,	45,000	½ mile,	15	100 00	1,221 75	1,500 00	Hollidaysburg,	Sept. 26-29.
Bradford,	Bradford County Agricultural Society,	15,000	½ mile,	350	495 79	1,700 00	1,700 00	Towanda,	Sept. 26-29.
Bradford,	Troy Agricultural Society,	15,000	½ mile,	10	200 00	800 00	2,000 00	Alperon Park, Troy.	Sept. 12-15.
Bradford,	Wyalusing Fair Association,	5,000		117	104 84	500 00	2,000 00	Wyalusing,	Sept. 12-15.
Bucks,	Bucks County Agricultural Society,	10,978		16	207 98	208 00		Menlo Park, Perkasie.	Sept. 13-16.
Bucks,	Farmers' Picnic and Exhibition,		½ mile,	83				Lu Lu Park, Quakertown.	Sept. 1-2.
Butler,	Butler Driving Park and Fair Association.	50,000	½ mile,	350		4,240 25	8,000 00	Butler,	Aug. 22-25.

Cambria,	Cambria County Agrl. Association,	10,000	½ mile,	371	685 25	2,406 50		Carrolltown,	Sept. 5-8.
Cameron,	Cameron County Agricultural Association.	5,000		15	500 00	580 00	1,000 00	Emporium,	Sept. 12-15.
Carbon,	Carbon County Industrial Society,	15,000	½ mile,	28	773 68	773 68	1,000 00	Lehighton,	Sept. 26-29.
Centre,	Centre County Agrl. Exhibiting Company.	2,000	½ mile,	7	562 30	2,000 00	2,000 00	Bellefonte,	October.
Chester,	The Oxford Agricultural Association,	15,000	½ mile,		500 00	4,000 00	4,000 00	Oxford,	Sept. 19-22.
Chester,	Chester County Agricultural Association,	20,000	½ mile,	175	500 00	2,000 00	2,000 00	West Chester,	Sept. 5-8.
Clarion,	Clarion County Fair Association,	12,000	½ mile,	270	820 00	2,500 00	4,000 00	Clarion,	Sept. 19-22.
Clearfield,	DuBois Driving Association,	14,000	½ mile,	85	700 00	740 00		DuBois,	Sept. 5-8.
Columbia,	Columbia County Agrl., Hort. and Mech. Asso.	30,000	½ mile,	400	1,000 00	8,421 80	8,000 00	Bloomsburg,	Oct. 3-6.
Crawford,	Conneaut Lake Agricultural Association,	47,000	½ mile,		1,000 00	5,000 00	7,000 00	Exposition Park,	Aug. 28-Sept. 1.
Cumberland,	Agricultural Association of Cumberland County.	15,000	½ mile,					Carlisle,	Not decided.
Cumberland,	Hogestown Horse and Cattle Show,	3,000		18				Hogestown,	June 7-8.
Dauphin,	Middletown Fair Association,	20,000	½ mile,	100	595 10	695 50		Middletown,	September.
Dauphin,	Gratz Agricultural and Hort. Asso.,	4,500	½ mile,	65	50 00	486 95		Gratz,	Not decided.
Erie,	Erie County Horticultural Society,								
Erie,	Corry Fair and Driving Park Asso.,	20,000	½ mile,	98	659 90			Corry,	Sept. 12-15.
Greene,	Greene County Agrl. and Manufacturing Society.	8,000	½ mile,	114	671 00			Carmichaels,	Sept. 19-22.
Indiana,	Indiana County Agricultural Society,	40,000	½ mile,		400 00	3,000 00	3,000 00	Indiana,	Aug. 29-Sept. 1.
Jefferson,	Jefferson County Agrl. and Driving Park Association.	15,000	½ mile,		847 40	847 40		Brookville,	Sept. 12-15.
Juniata,	Juniata County Agricultural Society,	40,000	½ mile,	113	359 00	958 00	1,000 00	Port Royal,	Sept. 12-15.
Lackawanna,	Lackawanna County Fair and Grange Poultry Association.	10,000		50		561 00	1,000 00	Clarks Summit,	Sept. 12-14.
Lancaster,	Lancaster County Agrl. Society,	75,000	½ mile,	333	1,000 00	1,647 00	2,500 00	Lancaster,	Sept. 26-29.
Lawrence,	Pulaski Fair Association,	12,000	½ mile,	100	1,000 00	1,400 00	1,500 00	Pulaski,	Sept. 11-14.
Lebanon,	Lebanon Valley Fair Association,	45,000	½ mile,	600	990 40	5,823 40	6,000 00	Lebanon,	Aug. 22-25.
Lebanon,	Lebanon County Agrl. and Hort. Asso.,			105					No fair.
Lehigh,	Lehigh County Agricultural Society,	200,000	½ mile,	897	375 00	25,000 00	25,000 00	Allentown,	Sept. 19-22.
Lycoming,	Muncy Valley Farmers' Club,	10,000	½ mile,	115	1,000 00	1,063 02	1,000 00	Hughesville,	Oct. 10-13.
McKean,	McKean County Fair Association,	20,000	½ mile,	65	1,000 00	1,002 70	1,500 00	Smethport,	Sept. 5-8.
Mercer,	Mercer Central Agricultural Society,	20,000	½ mile,						Not decided.
Mercer,	Mercer County Agrl. Society,	25,000	½ mile,	300	500 00	2,820 35	3,500 00	Stoneboro,	Sept. 18-21.
Monroe,	Monroe County Agricultural Society,	10,000	½ mile,	55	791 50	691 50	1,000 00	Stroudsburg,	Sept. 4-8.
Northampton,	Northampton County Agrl. Society,	75,000	½ mile,	325	208 10	1,583 70	4,000 00	Nazareth,	Sept. 12-15.
Northampton,	Pennsylvania State Fair Association,								No fair.
Northumberland,	Milton Fair and Northumberland County Agrl. Association.	20,000	½ mile,	98	686 50	823 95	2,400 00	Milton,	Sept. 19-22.
Perry,	Perry County Agricultural Society,	10,000	½ mile,	325	771 50	772 00	1,500 00	Newport,	Oct. 10-13.
Philadelphia,	Pennsylvania Horticultural Society,			870		2,300 00	2,580 00	Hort. Hall, Phila.	Nov. 7-10.
Sullivan,	Sullivan County Agricultural Society,	5,000		68	416 15	416 15		Forksville,	Oct. 3-6.
Susquehanna,	Susquehanna County Argl. Society,	5,000		30	171 63	516 00		Montrose,	Sept. 12-15.
Susquehanna,	Harford Agricultural Society,	10,000	½ mile,			561 80	825 00	Harford,	Sept. 20-21.
Tioga,	Cowanesque Valley Agrl. Society,	10,000	½ mile,	50	410 55	1,367 50	4,000 00	Westfield,	Sept. 12-15.

List of County and Local Agricultural Societies, with Names and Addresses of Presidents and Secretaries and Dates for Holding Fall Exhibitions of 1911, Etc—Continued.

County.	Corporate Name of Society.	Attendance, 1910.	Race track.	Membership.		Premiums.		Held 1911.	
				Number.	Amount received from State fund.	Paid, 1910.	Offered, 1911.	Place.	Date.
Tioga,	Smythe Park Association,	40,000	½ mile,	--------	590 00	2,100 00	3,000 00	Mansfield,	Sept. 19-22.
Tioga,	Tioga County Pomona Grange,	--------	½ mile,	800	--------	--------	--------	--------	No fair.
Union,	Union County Agricultural Society,	15,000	½ mile,	202	371 25	1,374 75	1,500 00	Lewisburg,	Sept. 26-29.
Washington,	Union Agricultural Association,	35,000	1-3 mile,	2,000	1,000 00	2,414 45	2,500 00	Burgettstown,	Oct. 2-5.
Washington,	Sandy Plains Fair Association,	3,000	½ mile,	--------	--------	2,000	2,500	Sandy Plains, Millsboro.	Aug. 28-30.
Warren,	Warren Co. Farmers' and Breeders Asso.,	--------	--------	50	50 00	--------	--------	--------	No fair.
Wayne,	Wayne County Agricultural Society,	15,000	½ mile,	--------	--------	--------	--------	Honesdale,	Not decided.
Westmoreland,	Westmoreland Agricultural Society,	15,000	½ mile,	100	1,000 00	2,651 35	3,000 00	Youngwood,	Sept. 5-8.
Wyoming,	Wyoming County Fair Association,	12,000	½ mile,	195	898 00	898 00	1,500 00	Tunkhannock,	Sept. 19-22.
York,	York County Agricultural Society,	135,000	½ mile,	215	1,100 00	5,067 25	9,000 00	York,	Oct. 2-6.
York,	Hanover Agricultural Society,	50,000	½ mile,	120	--------	5,354 75	6,200 00	Hanover,	Sept. 19-22.
York,	New Freedom Farmers' Improvement Association.	12,000	--------	100	--------	150 00	--------	New Freedom,	Sept. 28-30.
	Total,	1,543,478	--------	13,942	$28,351 94	$121,225 80	$128,075 00		

List of County and Local Agricultural Societies, with Names and Addresses of Presidents and Secretaries and Dates for Holding Fall Exhibitions of 1911, Etc—Continued.

County.	Corporate Name of Society.	Attendance, 1910.	Race track.	Membership.		Premiums.		Held 1911.	
				Number.	Amount received from State fund.	Paid, 1910.	Offered, 1911.	Place.	Date.
Tioga,	Smythe Park Association,	40,000	½ mile,		590 00	2,100 00	3,000 00	Mansfield,	Sept. 19-22.
Tioga,	Tioga County Pomona Grange,		½ mile,	300					No fair.
Union,	Union County Agricultural Society,	15,000	½ mile,	202	371 25	1,374 75	1,500 00	Lewisburg,	Sept. 26-29.
Washington,	Union Agricultural Association,	35,000	1-3 mile,	2,000	1,000 00	2,414 45	2,500 00	Burgettstown,	Oct. 2-5.
	Sandy Plains Fair Association,	3,000	½ mile,			2,000	2,500	Sandy Plains, Millsboro.	Aug. 28-30.
				50	50 00				

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ORGANIZATION

OF THE

BUREAU OF CHEMISTRY.

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W. Earl Huber, Laboratory Assistant.
L. Pearl Gustin, Clerk and Stenographer.

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*Employed by the Dairy and Food Bureau.

Commonwealth of Pennsylvania.

DEPARTMENT OF AGRICULTURE—BUREAU OF CHEMISTRY

BULLETIN No. 208

COMMERCIAL FEEDING STUFFS
OF PENNSYLVANIA IN 1910

THEIR CHEMICAL AND MICROSCOPICAL EXAMINATION

JAMES W. KELLOGG, Chief Chemist

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SECRETARY OF AGRICULTURE

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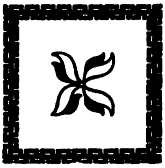


LETTER OF TRANSMITTAL.

DEPARTMENT OF AGRICULTURE.
BUREAU OF CHEMISTRY.

Harrisburg Pa., April 19, 1911.

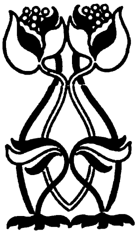
Hon. N. B. Critchfield,
Secretary of Agriculture,
Harrisburg, Pa.

Dear Sir: I have the honor to transmit herewith a report of the chemical analyses and microscopical work performed by this Bureau in the examination of samples of commercial feeding stuffs collected in the open markets of the State during 1910.

Such additional information is included in this report as was considered to be of importance.

Very respectfully,

JAMES W. KELLOGG,
Chief Chemist.



BULLETIN No. 208.

COMMERCIAL FEEDING STUFFS

OF

PENNSYLVANIA,

IN

1910.

Their Chemical and Microscopical Examination.

JAMES W. KELLOGG.*

INTRODUCTION.

This bulletin is a report of the work performed by the Bureau of Chemistry, of the Pennsylvania Department of Agriculture, and includes the results of the analyses and examinations of 1,500 samples of commercial feeding stuffs secured in the open markets of the State by Special Agents of the Department, during the year 1910. It also includes a report of the analyses of special samples of feeding stuffs sent in by manufacturers and dealers of Pennsylvania, together with such other information as was thought to be of importance. All the samples of feeding stuffs received during the year were covered by the Feeding Stuff Law, Act No. 224, approved May 3d, 1909.

This law restricts the content of crude fiber to nine per cent. in the brands of feeding stuffs where oat hulls are used as one of the ingredients and also prohibits the use of rice hulls, peanut shucks and weed seeds.

---

*Assisted by John S. Spicer, George L. Walters, Malcolm H. Ulman, Elmer C. Gildroy and W. Earl Huber. The microscopical work herein reported was performed by Mr. Spicer.

The result of the year's inspection shows that the number of violations has decreased materially over that found in previous years. In the majority of cases those feeds which contained oat hulls, were found to contain crude fiber very close to that required by law. No samples were found to contain peanut shucks and rice hulls, as was found to be the case during the work of former years.

It is gratifying to report that no samples of wheat bran or wheat mixed feeds were found to be adulterated with ground corn cobs, as was also found to be the case in samples previously examined.

In a large number of the samples of mixed feeds, weed seeds were found present in varying amounts, from only traces to considerable proportions, although the character of these feeds has materially improved over those examined during 1909. However, there is marked room for improvement.

No samples of molasses feeds were found to be adulterated with peanut shucks or rice hulls, which proves conclusively that the present feeding stuff law has been the means of driving from the markets, molasses feeds which were formerly found to be adulterated with these products. The number of feeding stuffs found on the market composed of maize products, including ground corn cobs has apparently been reduced, as only a few samples of this grade of goods were received during the year. While a large number of the wheat and rye offals and mixtures of whole grain feeds were not required to be guaranteed by the Feeding Stuff Law for protein, fat and fiber, a large percentage of those received were found to be so guaranteed, and the number of deficiencies in these products, as well as in the brands of feeding stuffs required to be guaranteed was found to be less than observed last year.

Of the 1,500 samples received 1,241 or 82.73 per cent. were guaranteed and in the majority of cases, the composition or list of ingredients was guaranteed upon the sacks containing the same, or upon attached cards. The number of deficiencies in protein and fat was found to be less during this year, except in the case of protein alone, than in the four preceding years. In Table V will be noted the percentage decrease in deficiencies during the last five years.

The number of prosecutions during 1910 for violation of the Feeding Stuff Law has been less than the number of cases in 1909. Copies of the law have been sent to a large number of dealers and manufacturers and as a rule a ready willingness has been shown to comply with its requirements. This has been the means of reducing the number of violations. Where special feeding stuffs have been sent in for analysis, inquiries have been made in regard to the guaranteeing of these products, and in these cases where a special effort has been made to find out the exact composition of feeding stuffs and the proper guarantees placed on the packages containing such products, the subsequent analyses of such samples showed that these guarantees were more truly given than has often been found to be the case.

We have received a great many inquiries concerning the character and feeding value of feeding stuffs, requests for bulletins, copies of laws, and for special information in regard to rations for feeding purposes. In so far as possible these inquiries have been anwered and requests for information and data have been complied with.

ACKNOWLEDGMENTS.

To the Hon. N. B. Critchfield, Secretary of Agriculture, we extend many thanks for the encouragement and innumerable courtesies received during the year.

To each member of the Bureau staff is due a full measure of appreciation for their faithful assistance and co-operation.

Many thanks are also due to our General Agent, Mr. G. G. Hutchison, for the able performance of his many duties, and to the various trade journals, the press and to the manufacturers of and dealers in feeding stuffs, who have shown such a ready willingness to co-operate with the Department in the enforcement of the Feeding Stuff Law.

ANALYSES OF SAMPLES OF FEEDING STUFFS RECEIVED FROM MANUFACTURERS AND PURCHASERS OF THE SAME LOCATED IN PENNSYLVANIA.

During the year, 238 special samples of feeding stuffs were sent to the Bureau for analysis, by manufacturers of, dealers in or purchasers of feeding stuffs, located within the State, together with the fee of one dollar for each analysis, as provided for by law. Reports were made in each case to the parties sending the samples, and in a number of cases, inquiries were sent in regard to the composition of the same, as well as to the method of guaranteeing and labeling. Fees received for these analyses were covered into the State Treasury, as provided for by law.

This provision in the law, making it possible for manufacturers, dealers and others selling or purchasing feeding stuffs located within the State, to send samples to the Department for analysis, was made in order that such parties might ascertain the true character of their feeding stuffs, and to enable them to properly guarantee their products for protein, fat and fiber, as well as to find out whether or not the goods were as guaranteed by the manufacturers. The analyses made on these samples have been the means of making satisfactory settlements, where it was found that the protein and fat were considerably lower than the guarantees. It has also been the means of causing several brands of products to be properly guaranteed and preventing thereby dealers selling such brands, from being liable for prosecution for violation of the law, where the contents of protein, fat and fiber were not as stated on the sacks or cards.

The following table (No. 1), gives the results of the analyses of the special samples, together with the brand names or the names of the feeding stuffs and the names of the parties from whom they were received.

TABLE I.—ANALYSES OF SAMPLES OF FEEDING STUFFS RECEIVED FROM MANUFACTURERS AND PURCHASERS OF THE SAME LOCATED IN PENNSYLVANIA.

Chief Chemist's number.	Name of Feeding Stuff.	Received from—	Crude protein.	Crude fat.	Crude fiber.
			Per ct.	Per ct.	Per ct.
F 863	Malt sprouts,	E. A. Poth & Sons, Philadelphia,	30.13	2.18	12.19
F 864	F. P. C. Pigeon Feed,	F. P. Cassel & Son, Lansdale,	11.88	3.58	2.61
F 865	Corn and oats chop,	The Reed Milling Co., Erie,	10.00	4.58	5.07
F 866	Mash for chickens,	Dickson Mill and Grain Co., Scranton.	20.00	5.30	7.32
F 867	Stock food,	D. B. Baxter, Montrose,	24.69	3.92	11.13
F 868	Buckwheat middlings,	H. J. Klingler & Co., Butler,	8.75	2.04	32.40
F 869	Distillers' grains,	The Angelo Myers Distillery, Philadelphia.	16.31	10.75	15.50
F 870	Cottonseed meal,	R. H. Long, Drumore,	37.94	7.65	9.50
F 871	Gluten feed,	Frank Bosworth, Rome,	26.56	5.00	6.82
F 872	Chop feed,	Dayton Milling Co., Towanda,	9.13	4.15	5.51
F 873	Brewers' grains No. 1,	Stegmaier Brewing Co., Wilkes-Barre.	28.13	6.78	13.25
F 874	Brewers' grains No.2,	Stegmaier Brewing Co., Wilkes-Barre.	26.69	6.60	13.89
F 875	Corn distillers' grains,	E. H. Keen & Co., Parkesburg,	28.25	11.98	12.75
F 876	Chop feed,	Burkley Bros., Lanesboro,	10.50	5.65	5.67
F 877	Cottonseed meal,	W. E. Savacool, Benjamin,	41.25	6.63	10.96
F 878	Brewers' grains No. 3,	Stegmaier Brewing Co., Wilkes-Barre.	25.00	6.33	14.17
F 879	Mixed chop feed,	Stapleton & McClain, Saxton,	10.13	3.70	5.06
F 880	Poultry tonic,	G. Walter Smith, Chambersburg,	8.25	3.43	10.54
F 881	K. K. K. gluten feed,	A. O. Wertz & Bro., Reading,	23.63	4.18	6.92
F 882	"Richland" mixed feed,	O. H. Schmucker, Friedens,	9.56	2.03	35.28
F 883	Oat bran,	L. J. Wagner, Philadelphia,	9.56	4.58	23.68
F 884	Fine meat meal, "S,"	F. P. Cassel & Son, Lansdale,	68.19	4.94	1.41
F 885	Primo Golden Dairy Feed,	Penna. Primo Feed Co., Harrisburg.	24.31	6.14	11.35
F 886	Primo Hercules Horse and Mule Feed.	Penna. Primo Feed Co., Harrisburg.	11.56	4.49	6.19
F 887	Primo Scratch Feed,	Penna. Primo Feed Co., Harrisburg.	10.50	3.84	4.64
F 888	Primo Sylva Scratch Feed,	Penna. Primo Feed Co., Harrisburg.	8.44	3.18	2.67
F 889	Primo Matchless Egg Maker	Penna. Primo Feed Co., Harrisburg.	12.00	4.23	3.18
F 890	Primo Purity Pigeon Feed,	Penna. Primo Feed Co., Harrisburg.	11.00	3.05	3.03
F 891	Primo Pullet Feed,	Penna. Primo Feed Co., Harrisburg.	10.06	3.29	2.09
F 892	Primo Little Jewel Chick Feed.	Penna. Primo Feed Co., Harrisburg.	11.94	4.08	2.11
F 893	Distillers' dried rye grains,	Moss Distilling Co., Pittsburg,	15.38	8.50	14.58
F 894	Laxo cake meal,	Thompson & Co., Allegheny,	28.50	8.37	9.22
F 895	Federal Poultry Food,	Federal Stock Food Co., Mifflinburg.	17.25	12.77	8.22
F 896	Federal Stock Food,	Federal Stock Food Co., Mifflinburg.	19.38	13.45	12.79
F 897	Scratch feed,	Delph, Ettinger & Co., Philadelphia.	10.75	3.37	2.91
F 898	Refuse middlings,	Canonsburg Milling Co., Canonsburg.	18.31	9.68	5.08
F 899	Mash feed,	Wopsy Poultry Yards, Altoona,	20.88	6.54	5.08
F 900	Beef scraps,	Wopsy Poultry Yards, Altoona,	62.69	9.95	1.80
F 901	Light linseed meal,	The Buckwalter Supply Co., Lancaster.	38.56	5.74	6.65
F 902	Dark linseed meal,	The Buckwalter Supply Co., Lancaster.	37.00	5.72	7.24
F 903	Big Milk Cow Feed,	Good Times Supply Co., Galeton.	19.56	4.76	11.37
F 904	Wheat Middlings,	G. D. Benn, Coalport,	17.06	4.43	3.63
F 905	Hammond Dairy Feed,	Henry N. Schleifer, Allentown,	15.50	5.94	11.81
F 906	Hammond Dairy Feed,	John G. Early, Palmyra,	17.88	5.68	13.04
F 907	Cottonseed feed,	E. H. Keen & Co., Parkesburg,	7.38	1.83	33.22
F 908	Dried distillers' grain from rye.	Vandergrift Distilling Co., Pittsburg.	13.06	7.85	18.02
F 909	Distillers' grains,	The Large Distilling Co., Pittsburg.	14.25	7.18	15.37

TABLE I.—Continued.

Chief Chemist's number.		Name of Feeding Stuff.	Received from—	Crude protein.	Crude fat.	Crude fiber.
				Per ct.	Per ct.	Per ct.
F	910	Rye middlings,	Blank & Gottshall, Sunbury,	15.44	3.90	5.12
F	911	No. 3 Stock feed,	Miner, Hillard Milling Co., Wilkes-Barre.	12.00	6.75	8.15
F	912	Chop feed,	Goff & Barclay, Du Bois,	7.63	3.49	8.86
F	913	Brewers' dried grains,	Penn Grain and Feed Co., Philaphia.	27.50	7.68	14.59
F	914	Dried distillers' grains from rye.	Vandergrift Distilling Co., Pittsburg.	14.06	8.85	17.90
F	915	Sugarota Dairy Feed,	Henderson Supplee & Sons, Conshohocken.	18.63	7.25	10.55
F	916	Gluten feed "A,"	James M. Hallman Est., Pottstown.	19.00	3.45	7.12
F	917	Dairy feed,	Altoona Feed Mills, Altoona,	7.63	3.78	9.37
F	918	Horse chop,	Altoona Feed Mills, Altoona,	12.75	5.52	7.47
F	919	Alfafa mixed feed,	Hiram Altman & Son, Manor,	11.00	4.20	7.12
F	920	"Sugarota" Dairy Feed,	E. H. Kane, Philadelphia,	18.56	7.18	10.64
F	921	Cottonseed meal,	City Roller Mills, New Castle,	36.50	10.80	10.24
F	922	Hammond Dairy Feed,	T. S. Snyder, Brodbecks,	17.38	5.35	11.58
F	923	Mixed chop,	H. L. Garrison & Bro., Berwick,	9.81	3.85	3.11
F	924	Mixed feed,	H. L. Garrison & Bro., Berwick,	11.69	4.38	4.74
F	925	"C & B" feed,	J. S. Weaver, New Providence,	12.69	5.30	4.89
F	926	Mixed feed,	John M. Lynch, Waterford,	10.44	2.66	3.24
F	927	Clinton gluten feed,	C. W. Wager & Co., Philadelphia,	21.75	4.98	6.27
F	928	Mixed feed,	SpanogleYeager Milling Co., Lewistown.	11.56	4.42	5.23
F	929	Barley skalpings,	Geo. M. Roueche, Meadville,	6.81	1.92	22.70
F	930	Sugarota Dairy Feed,	William F. Fretz, Pipersville,	16.13	6.62	11.96
F	931	Feed "Circle No. 1,"	M. F. Baringer, Philadelphia,	7.56	3.38	8.57
F	932	Feed "Circle No. 2,"	M. F. Baringer, Philadelphia,	8.31	4.58	7.57
F	933	Mixed feed,	J. G. Kimble, Fishing Creek,	10.75	4.72	11.29
F	934	Refuse middlings,	Dunlap Bros., Canonsburg,	17.19	6.74	9.37
F	935	Distillers' grains,	Truman D. Dunn, Herrick Center.	28.94	12.58	10.75
F	936	"Belvidere" brewers' grains,	M. F. Baringer, Philadelphia,	28.69	9.28	12.46
F	937	Dried brewers' grains "A,"	E. Dalett Hemphill, West Chester.	27.81	7.52	13.36
F	938	Corn, oats and rye feed,	Manbeck & Nelson, Mifflin,	11.44	4.21	3.44
F	939	Egg maker feed,	Blue Grass Veterinary Remedy Co., Harrisburg.	16.63	5.85	5.51
F	940	Chick feed,	Blue Grass Veterinary Remedy Co., Harrisburg.	11.88	4.53	5.96
F	941	Dried brewers' grains "A,"	Penn Grains and Feed Co., Philadelphia.	30.63	8.98	12.80
F	942	Dried brewers' grains "B,"	Penn Grains and Feed Co., Philadelphia.	23.75	7.04	17.82
F	943	Mixed feed,	Wm. O. Williams, Portland,	10.56	3.33	3.02
F	944	Glutena meal,	R. R. Jones, Narcissa,	12.50	2.69	4.23
F	945	W. M. C. Scratch Feed,	Wertz Milling Co., Reading,	11.19	3.22	3.13
F	946	H. T. Horse Feed,	The H. T. Stock Food Co., New Brighton.	17.13	5.62	6.28
F	947	H. T. Poultry Food,	The H. T. Stock Food Co., New Brighton.	19.50	5.40	5.26
F	948	Napoleon flour,	Harrisburg Baking Co., Harrisburg.	14.44	1.65	0.30
F	949	Producers flour,	Harrisburg Baking Co., Harrisburg.	15.81	1.78	0.50
F	950	Chicken feed,	Manbeck & Nelson, Mifflin,	14.00	5.05	2.56
F	951	No. 1 Feed,	Warr & Canby, Philadelphia,	10.94	7.30	4.85
F	952	No. 2 Feed,	Warr & Canby, Philadelphia,	9.19	7.67	11.29
F	953	No. 2½ Feed,	Warr & Canby, Philadelphia,	10.13	8.00	8.26
F	954	No. 3 Feed,	Warr & Canby, Philadelphia,	11.50	7.69	13.86
F	955	No. 3½ Feed,	Warr & Canby, Philadelphia,	10.75	8.09	9.88
F	956	No. 1, Feed,	Kutztown Roller Mills, Kutztown,	8.31	3.96	1.85
F	957	No. 2 Feed,	Kutztown Roller Mills, Kutztown,	13.00	12.50	4.98
F	958	No. 3 Feed,	Kutztown Roller Mills, Kutztown,	9.38	4.63	1.55
F	959	No. 4 Feed,	Kutztown Roller Mills, Kutztown,	8.13	5.48	9.06
F	960	Maltine Dairy Feed,	Miller & Neal, Warren, Ohio,	26.29	4.78	9.82
F	961	Dried Brewers' Grains,	Rosekraus-Snyder Co., Philadelphia.	27.69	8.88	14.39
F	962	Sterling Stock Feed,	Wm. T. Snyder, Reading,	12.31	4.68	5.81
F	963	No. 1 Feed,	J. M. Hayes' Co., Montoursville,	9.13	5.23	2.73
F	964	No. 2, Feed,	J. M. Hayes' Co., Montoursville,	9.88	4.98	4.82

TABLE I.—Continued.

Chief Chemist's number.	Name of Feeding Stuff.	Received from—	Crude protein.	Crude fat.	Crude fiber.
			Per ct.	Per ct.	Per ct.
F 965	No. 3 Feed,	J. M. Hayes' Co., Montoursville,	10.19	4.83	2.57
F 966	Corn and oat chop,	S. E. Delinger, Port Royal,	10.13	4.34	3.91
F 967	H. T. Dairy Feed,	H. T. Stock Food Co., New Brighton.	17.06	5.19	6.22
F 968	Mixed feed,	Warr & Canby, Philadelphia,	9.50	4.64	8.15
F 969	Poultry food,	Colonial Stock Food Co., Montrose.	13.50	3.42	8.98
F 970	No. 1 Horse Feed,	Chester Milling Co., Chester,	11.81	4.92	8.10
F 971	No. 2 Chick Feed,	Chester Milling Co., Chester,	9.56	3.07	2.72
F 972	No. 3 Scratch Feed,	Chester Milling Co., Chester,	10.25	4.90	5.85
F 973	L. & S. Poultry Mash,	Levan & Sons, Columbia,	15.31	4.46	7.42
F 974	Gluten feed,	The Collegeville Mills, Collegeville.	21.63	5.16	8.61
F 975	Mash feed,	Blank & Gottshall, Sunbury,	11.88	2.62	3.81
F 976	M. & P Poultry Mash,	Marshall & Pabst, Sharon Hill,	18.88	5.45	8.36
F 977	Feed,	Ernest Vogel, Hawley,	9.00	4.23	5.12
F 978	Teed's Ready Mixed Laying Mash.	W. I. Teed & Sons, Sayre,	17.63	5.54	9.33
F 979	Columbus gluten feed,	C. W. Wager & Co., Philadelphia.	16.69	5.42	6.57
F 980	Matchless Eggmaker,	American Food and Remedy Co., Harrisburg.	19.38	6.11	4.07
F 981	L. & S. Hen Feed,	Levan & Sons, Columbia,	9.13	2.88	3.70
F 982	Sugarota Dairy Feed,	A. W. Martin, Elizabethtown,	14.58	4.83	15.95
F 983	H. T. Horse Food,	The H. T. Stock Food Co., New Brighton.	17.50	5.23	7.25
F 984	H. T. Poultry Food,	The H. T. Stock Food Co., New Brighton.	19.88	5.83	5.33
F 985	Brewers' dried grains "A,"	Dwight E. Hamlin & Co., Pittsburg.	21.81	7.08	16.22
F 986	Brewers' dried grains "B,"	Dwight E. Hamlin & Co., Pittsburg.	23.38	7.08	13.52
F 987	Alfalfa meal,	Dwight E. Hamlin & Co., Pittsburg.	18.19	2.83	27.01
F 988	Special Chop Feed,	Altoona Grain and Feed Co., Altoona.	9.88	5.04	6.91
F 989	No. 1 Brewers' grains,	The Johnstown Dried Grains Co., Johnstown.	26.63	8.96	15.66
F 990	No. 2 Brewers' grains,	The Johnstown Dried Grains Co., Johnstown.	28.13	8.70	14.42
F 991	No. 3 Brewers' grains,	The Johnstown Dried Grains Co., Johnstown.	26.63	9.03	13.72
F 992	No. 4 Brewers' grains,	The Johnstown Dried Grains Co., Johnstown.	29.88	9.28	14.60
F 993	Mash Feed for Chickens,	H. B. Kratz & Co., Schwenksville,	10.06	2.78	4.06
F 994	Gluten feed,	Worstall Bros. & Co., Newtown,	16.81	5.58	6.98
F 995	Rye middlings,	Blank & Gottshall, Sunbury,	15.69	3.31	4.50
F 996	Mixed feed,	E. H. Lehman, Elizabethtown,	14.09	0.86	14.07
F 997	Gluten feed,	Quarryville Grain Elevator, Quarryville.	22.13	5.48	6.07
F 998	Horse feed,	Blank & Gottshall, Sunbury,	12.44	4.08	8.56
F 999	Dried brewers' grains,	O. W. Shortlidge & Co., Lincoln University.	22.81	6.85	14.22
F 1000	Alfalfa Dairy Feed,	Alfalfa Feed Mills, Philadelphia,	17.94	4.25	16.10
F 1001	Special Pullet Growing Food,	American Food and Remedy Co., Harrisburg.	14.50	3.96	2.55
F 1002	Hammond Dairy Feed,	Thomas C. Wilcox, Camp Ground.	17.23	3.58	10.25
F 1003	Sugarota Dairy Feed,	A. W. Martin, Elizabethtown,	13.63	5.48	17.56
F 1004	O. A. & B. Chop,	H. J. Klingler & Co., Butler,	9.06	4.38	4.59
F 1005	Oat bran,	Fred. L. Lemont, Philadelphia,	14.81	5.88	12.85
F 1006	Sugarota Dairy Feed,	Elmer Eby, Lititz,	15.63	6.52	18.24
F 1007	Mixed feed,	E. H. Lehman, Elizabethtown,	14.25	1.67	14.71
F 1008	No. 1 gluten feed,	C. W. Wagar & Co., Philadelphia.	21.06	5.23	6.63
F 1009	Chop feed,	F. V. Perry & Co., Scottdale,	9.06	3.61	7.50
F 1010	Gluten feed,	American Starch Co., Lititz,	17.13	3.38	6.00
F 1011	Poultry Food,	H. P. Brackbill, Vintage,	11.00	3.47	3.55
F 1012	No. 2 Gluten feed,	C. W. Wager & Co., Philadelphia.	24.94	3.79	7.17
F 1013	Flaxseed screenings,	Harry Smith, Philadelphia,	13.19	12.24	13.06

TABLE I.—Continued.

Chief Chemist's number.	Name of Feeding Stuff.	Received from—	Crude protein.	Crude fat.	Crude fiber.
			Per ct.	Per ct.	Per ct.
F 1014	Sugarota Scratch Feed,	Diehl, Omwake & Diehl, Chambersburg.	10.50	5.02	2.47
F 1015	Sugarota Dairy Feed,	Diehl, Omwake & Diehl, Chambersburg.	18.48	5.67	10.87
F 1016	Ground beef scraps,	Quaker City Mfg. Co., Philadelphia.	60.25	10.81	2.08
F 1017	Mixed chicken grains,	Scranton Flour and Grain Co., Scranton.	9.44	4.65	3.05
F 1018	Corn, oats and barley chop,	H. J. Klingler & Co., Butler,	9.81	4.15	4.02
F 1019	A No. 1 Dairy Feed,	H. J. Klingler & Co., Butler,	24.38	7.55	9.43
F 1020	Germ meal,	H. J. Klingler & Co., Butler,	14.06	3.39	0.83
F 1021	Poultry food,	D. C. Kauffman, York,	10.25	3.60	3.80
F 1022	Chick feed,	Josiah B. Seibert, Reading,	10.41	3.53	4.35
F 1023	Sucrene Dairy Feed,	Diehl, Omwake & Diehl, Chambersburg.	14.99	4.15	12.90
F 1024	Dewey Bros. distillers' grains	Equity Co-Operative Exchange, Wellsboro.	27.13	13.01	13.92
F 1025	Buckwheat middlings,	H. J. Klingler & Co., Butler,	8.38	2.08	22.74
F 1026	Sugarota Dairy Feed,	J. T. Gay & Son, Coatesville,	15.60	5.66	16.03
F 1027	Buckwheat feed,	Dayton Milling Co., Towanda,	17.44	4.75	24.20
F 1028	Gluten feed,	Ezl. Dunwoody Co., Philadelphia,	22.69	4.84	16.77
F 1029	Brewers' dried grains,	Ezl. Dunwoody Co., Philadelphia,	26.19	7.53	14.17
F 1030	Feed,	McFarland Supply Co., Greensburg.	20.88	3.08	5.76
F 1031	Poultry feed No. 1,	Philadelphia Seed Co., Philadelphia.	11.06	3.78	3.95
F 1032	Poultry feed No. 2,	Philadelphia Seed Co., Philadelphia.	10.31	3.60	3.37
F 1033	Pigeon feed No. 1,	Philadelphia Seed Co., Philadelphia.	14.88	2.72	3.81
F 1034	Pigeon feed No. 2,	Philadelphia Seed Co., Philadelphia.	11.94	3.55	3.47
F 1035	Pigeon feed No. 3,	Philadelphia Seed Co., Philadelphia.	12.25	4.20	3.79
F 1036	Chick feed No. 2,	Philadelphia Seed Co., Philadelphia.	12.00	2.68	2.67
F 1037	Flax feed No. 1,	W. H. Ingram, Philadelphia,	9.38	8.68	38.04
F 1038	Flax feed No. 2,	W. H. Ingram, Philadelphia,	8.25	1.81	57.75
F 1039	Poultry food,	Johnson Seed Co., Philadelphia,	7.56	2.75	3.51
F 1040	Poultry mash,	Geo. L. Siegel, Erie,	17.81	4.84	8.81
F 1041	"A" Feed,	F. & J. Bostwick, Lawrenceville,	7.75	4.78	9.21
F 1042	"B" Feed,	F. & J. Bostwick, Lawrenceville,	7.38	3.77	10.31
F 1043	Dried distillers' grains,	The Highspire Distillery Co., Highspire.	16.50	9.59	13.75
F 1044	Ajax Flakes, distillers' grains.	Equity Co-Operative Exchange, Wellsboro.	28.38	12.78	11.63
F 1045	Gluten feed,	C. W. Wagar & Co., Philadelphia.	28.00	3.38	6.75
F 1046	Gluten feed,	American Starch Co., Lititz,	20.69	5.67	6.78
F 1047	Germ meal,	American Starch Co., Lititz,	19.06	15.54	9.89
F 1048	Cottonseed meal,	E. H. Keen & Co., Parkesburg,	38.06	7.94	10.27
F 1049	Malt sprouts,	E. H. Keen & Co., Parkesburg,	27.00	1.64	14.08
F 1050	Gluten Feed "A,"	Worstall Bros. & Co., Newtown,	17.81	4.58	6.35
F 1051	Gluten Feed "B,"	Worstall Bros & Co., Newtown,	21.13	4.08	7.18
F 1052	No. 1 Feed,	Carl Tielenius, Pocono,	16.94	6.00	9.77
F 1053	No. 2 Feed,	Carl Tielenius, Pocono,	18.06	5.60	10.08
F 1054	No. 3 Feed,	Carl Tielenius, Pocono,	12.44	6.80	4.77
F 1055	"A" Molasses feed,	Dwight S. Hamlin, Pittsburg,	12.96	3.68	12.15
F 1056	"B" Molasses feed,	Dwight S. Hamlin, Pittsburg,	11.05	3.80	11.24
F 1057	Molasses feed,	D. D. Kirby, Pittsburg,	9.72	4.54	6.49
F 1058	Distillers' grains,	The Penwick Distillery, Cheswick,	17.50	8.60	13.36
F 1059	Dried rye distillers' grains,	Thompson Distilling Co., Pittsburg.	14.56	7.88	13.77
F 1060	Cottonseed meal,	Ezl. Dunwoody Co., Philadelphia,	41.94	9.04	9.14
F 1061	O. P. Linseed meal,	Ezl. Dunwoody Co., Philadelphia,	35.44	6.55	8.88
F 1062	Buckwheat middlings,	Ezl. Dunwoody Co., Philadelphia,	23.81	6.18	7.31
F 1063	Dried brewers' grains No. 1,	Stegmaier Brewing Co., Wilkes-Barre.	25.75	7.79	14.28
F 1064	Dried brewers' grains No. 2,	Stegmaier Brewing Co., Wilkes-Barre.	30.35	6.09	12.10

TABLE I.—Continued.

Chief Chemist's number.	Name of Feeding Stuff.	Received from—	Crude protein.	Crude fat.	Crude fiber.
F 1065	Dried brewers' grains, ------	Fuhrmann & Schmidt Brewing Co., Shamokin.	26.75	6.97	13.42
F 1066	Cottonseed meal No. 1, ----	B. Frank Walter, Christiana, ---	41.13	9.10	7.51
F 1067	Cottonseed meal No. 2, ----	B. Frank Walter, Christiana, ---	40.13	7.09	10.73
F 1068	No. 1 Gluten feed, ----------	C. V. Adams, Lancaster, --------	24.75	4.25	6.26
F 1069	No. 2 Gluten feed, ----------	C. V. Adams, Lancaster, --------	23.19	5.53	5.98
F 1070	Dried distillers' grains from rye.	Gibson Distilling Co., Gibsonton,	16.50	9.93	14.57
F 1071	Cottonseed meal, ------------	Nuttall & Barlow, Sugar Grove, -	40.19	8.43	9.67
F 1072	Hederich Oil Cake Meal, ----	Gorgas Pierie Mfg. Co., Philadelphia.	32.19	9.39	11.09
F 1073	Ajowan Oil Cake Meal, ---	Gorgas Pierie Mfg. Co., Philadelphia.	25.44	12.05	12.12
F 1074	Enterprise beef scraps, -----	Enterprise Poultry and Supply Co., Phoenixville.	42.96	40.84	2.46
F 1075	Cottonseed meal, -----------	Lewis B. Henson, Coatesville, ----	43.06	9.72	5.91
F 1076	Cottonseed meal, -----------	E. H. Keen & Co., Parkesburg,--	44.25	9.30	5.55
F 1077	Cottonseed meal, -----------	Jno. R. Burkholder, Lancaster,-	38.69	7.30	10.77
F 1078	Dewey's dried distillers' grains.	Equity Co-Operative Exchange, Wellsboro.	30.19	14.21	14.16
F 1079	Hen feed, -------------------	I. S. Fry, Reading, --------------	10.38	3.10	3.60
F 1080	Pigeon feed, ----------------	I. S. Fry, Reading, --------------	11.88	3.26	3.86
F 1081	Flour, ----------------------	L. Todd Owens, Apollo, ---------	12.44	1.53	0.52
F 1082	Cottonseed meal, -----------	S. S. Detweiler, Quakertown, ----	41.44	8.64	7.05
F 1083	Cottonseed feed, -----------	Lancaster Co. Farmers' Ass., Inc., Manheim.	13.31	3.38	33.10
F 1084	Dewey's dried distillers' grains.	W. S. Wise, Meadville, ---------	30.69	14.57	11.87
F 1085	Keever gluten feed, --------	Thomas, Hains & Co., Malvern,--	17.63	6.05	6.74
F 1086	Chicken grains with grit, --	R. S. McCague, Pittsburg, ------	10.19	3.12	3.22
F 1087	Chicken grains without grit,	R. S. McCague, Pittsburg, ------	10.88	3.99	3.77
F 1088	Wheat bran, ---------------	Paxton Flour and Feed Co., Harrisburg.	15.81	8.07	10.87
F 1089	L. & S. Chick Feed, --------	Levan & Sons, Columbia, --------	10.69	3.02	3.31
F 1090	Dried distillers' grains, -----	Gibson Distilling Co., Gibsonton,	16.38	9.40	15.75
F 1091	Cottonseed meal, -----------	E. A. & J. L. Pennock, Chatham,	41.25	9.09	8.04
F 1092	Dried distillers' grains, -----	The Sunnyside Distilling Co., Elrama.	16.19	9.03	14.12
F 1093	Sugarota Dairy Feed "A,"--	H. W. Kock & Co., Philadelphia,	17.10	4.27	16.57
F 1094	Sugarota Dairy Feed "B,"--	H. W. Kock & Co., Philadelphia,	17.22	4.74	14.52
F 1095	Dixie Brand cottonseed meal,	Jacob Trinley, Linfield, ---------	41.07	9.31	8.78
F 1096	Scratch feed, ---------------	Centre Hall Poultry Yards, Centre Hall,	10.85	3.90	3.17
F 1097	Oats, -----------------------	Elz. Dunwoody Co., Philadelphia.	13.02	5.50	9.77
F 1098	Colonial Food Digester, ----	Colonial Stock Food Co., Montrose.	26.00	4.78	11.61
F 1099	International Sugar Feed, --	D. G. Wiedman, East Earl, -----	16.71	4.87	11.49
F 1100	S. S. Molasses Feed, --------	Richardson Bros., Philadelphia,--	6.70	2.85	12.15

OFFICIAL SAMPLES OF FEEDING STUFFS OBTAINED BY SPECIAL AGENTS.

In carrying out the provisions of the Feeding Stuff Law during the year 1910, Special Agents of the Department visited 249 towns and cities in 57 counties of the State and secured 1,500 samples of feeding stuffs. These samples were sent in sealed bottles to the Chief Chemist and were analyzed chemically and examined microscopically, and the results obtained are reported in the following pages.

The following table (No. II) gives the names of the counties visited and the number of samples obtained in each.

TABLE II.—COUNTIES VISITED AND NUMBER OF SAMPLES SECURED FROM EACH.

Name of County.	No. of Samples.
Adams,	5
Allegheny,	53
Armstrong,	29
Beaver,	13
Bedford,	15
Berks,	45
Blair,	37
Bradford,	41
Bucks,	15
Butler,	28
Cambria,	33
Cameron,	10
Center,	22
Chester,	30
Clearfield,	36
Clinton,	17
Columbia,	24
Crawford,	8
Cumberland,	40
Dauphin,	26
Delaware,	12
Elk,	19
Erie,	26
Fayette,	14
Forest,	8
Franklin,	26
Greene,	5
Huntingdon,	23
Indiana,	28
Jefferson,	14
Juniata,	5
Lackawanna,	28
Lancaster,	33
Lawrence,	8
Lebanon,	30
Lehigh,	37
Lycoming,	30
Luzerne,	52
McKean,	33
Mercer,	24
Mifflin,	12
Montgomery,	28
Montour,	17
Northumberland,	48
Perry,	7
Philadelphia,	1
Potter,	13
Snyder,	8

TABLE II.—Concluded.

Name of County.	No. of Samples.
Somerset,	15
Susquehanna,	32
Tioga,	34
Union,	13
Venango,	23
Warren,	13
Washington,	45
Westmoreland,	61
York,	44
Total,	1,500

The following table (No. III) shows the classification of the feeding stuffs and the number in each class, which were received.

TABLE III.—CLASSIFICATION OF SAMPLES ANALYZED.

Name of Feeding Stuff.	No. of Samples.
Cottonseed meal,	47
Linseed meal, N. P.,	2
Linseed meal, O. P.,	62
Linseed meal with admixtures,	4
Corn oil meal,	1
Distillers' grains,	21
Brewers' grains,	15
Malt sprouts,	8
Gluten feed,	55
Hominy feed,	49
Flakeline,	1
Maizeline,	8
Corn bran,	2
Low grade flour,	24
Wheat middlings,	193
Wheat middlings with admixtures,	10
Mixed feed—wheat by-products,	16
Wheat bran,	246
Rye middlings,	11
Mixed feed—rye by-products,	3
Wheat and rye offals,	8
Buckwheat middlings,	1
Buckwheat feed,	5
Alfalfa meal,	25
Beet pulp,	11
Proprietary dairy and stock feeds,	285
Proprietary horse and mule feeds,	52
Calf meals	11
Miscellaneous feeds,	27
Miscellaneous chop feeds,	169
Proprietary poultry foods,	111
Animal by-products,	8
Condimental stock and poultry foods,	9
Total,	1,500

GUARANTEES AND DEFICIENCIES.

During the preceding four years a report has been made of the number of samples of feeding stuffs which were found to be deficient in protein and fat when compared with the guarantees for these substances. This report has been of interest, as it showed a gradual decrease of deficiencies each year. This decrease continued in the samples analyzed during 1910, except in the case of protein which increased somewhat over that found during 1909. The increase in those deficient in protein alone was found to be most noticeable in the proprietary dairy and stock feeds, cottonseed meals and gluten feeds.

The following table (No. IV) gives the number of samples of feeding stuffs received, according the classification shown in Table III, and in each class is given the number guaranteed for protein and fat, the number which were deficient in both protein and fat, the number deficient in protein alone and the number deficient in fat alone.

In the preparation of this table the deficiencies reported were only those where the protein was found to be one per cent. below, and the fat one-half of one per cent. below their guarantees. Of the 1,500 samples analyzed, 1,241 were found to be guaranteed for protein and fat. Of these, 17 or 1.37 per cent. were found to be deficient in both protein and fat; 83 or 6.69 per cent. were deficient in protein alone and 31 or 2.50 per cent. were deficient in fat alone. The total number of samples found to be deficient in protein was 100 or 8.06 per cent.; the total number deficient in fat was 48 or 3.87 per cent.

TABLE IV.—SUMMARY OF DEFICIENCIES IN 1910.

Name of Feeding Stuffs.	Number of samples analyzed.	Number of samples guaranteed.	Deficient in protein and fat.	Deficient in protein alone.	Deficient in fat alone.
Cottonseed meal,	47	47	8	10	2
Linseed meal, N. P.,	2	2	....	1	....
Linseed meal, O. P.,	62	61	1	....	1
Linseed meal with admixtures,	4	4	....	....	....
Corn oil meal,	1	1	....	....	....
Distillers' grains,	21	19	1	7	....
Brewers' grains,	15	15	1	5	....
Malt sprouts,	8	8	....	....	1
Gluten feed,	55	55	....	10	....
Hominy feed,	49	47	....	....	....
Flakeline,	1	1	....	....	....
Maizeline,	8	8	....	....	....
Corn bran,	2	2	....	....	1
Low grade flour,	24	19	....	1	....

TABLE IV.—Concluded.

Name of Feeding Stuffs.	Number of samples analyzed.	Number of samples guaranteed.	Deficient in protein and fat.	Deficient in protein alone.	Deficient in fat alone.
Wheat middlings,	193	126	-------	-------	-------
Wheat middlings with admixtures,	10	9	-------	-------	-------
Mixed feed—Wheat by-products,	16	16	-------	-------	-------
Wheat bran,	246	178	-------	-------	1
Rye middlings,	11	6	-------	-------	-------
Mixed feed—Rye by-products,	3	-------	-------	-------	-------
Wheat and rye offals,	8	7	-------	-------	-------
Buckwheat middlings,	1	-------	-------	-------	-------
Buckwheat feed,	5	1	-------	-------	-------
Alfalfa meal,	25	19	-------	4	-------
Beet pulp,	11	11	-------	-------	-------
Proprietary dairy and stock feeds,	285	285	1	32	8
Proprietary horse and mule feeds,	52	51	-------	2	6
Calf meals,	11	11	-------	-------	-------
Miscellaneous feeds,	27	25	-------	3	1
Miscellaneous chop feeds,	169	99	1	3	7
Proprietary poultry foods,	111	96	4	3	2
Animal by-products,	8	7	-------	2	-------
Condimental stock and poultry foods,	9	6	-------	-------	1
Total,	1,500	1,241	17	83	31

In order that the deficiencies found throughout the past five years may be compared, the following table (No. V), has been prepared. It will be noticed that with one exception in the case of protein alone, the number of deficiencies was less during 1910 than during any previous year.

TABLE V.—DECREASE OF DEFICIENCIES.

	1906.	1907.	1908.	1909.	1910.
	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.
Deficient in protein and fat,	13.66	3.80	2.31	1.61	1.37
Deficient in protein alone,	32.37	11.95	8.00	3.70	6.69
Deficient in fat alone,	1.43	6.25	4.74	3.88	2.50
Total deficient in protein,	46.00	15.00	10.33	5.31	8.06
Total deficient in fat,	15.00	10.09	7.06	5.50	3.87

CLASSIFICATION OF FEEDING STUFFS.

Feeding stuffs may be classed according to their content of crude protein into five classes. The percentage of protein is highest in cottonseed meals and decreases to that found in such feeds as whole grains ground together, and oat feeds composed of oat by-products.

The classification here presented was suggested by Jordan and Jenter,[*] as follows:

Class 1. 30 per cent. to 45 per cent. protein.
Class 2. 20 per cent. to 30 per cent. protein.
Class 3. 14 per cent. to 20 per cent. protein.
Class 4. 8 per cent. to 14 per cent. protein.
Class 5. 5 per cent. to 8 per cent. protein.

The hays and other coarse fodders may be classed in the fourth group, and the animal by-products are in a class by themselves.

In the following table (No. VI), a large number of the brands of feeding stuffs received are tabulated according to the above classification.

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[*] Bul. 166, New York Experiment Station, Geneva.

AVERAGE PARTIAL COMPOSITION AND RETAIL PRICE.

In the following table (No. VI), the average partial composition and retail price of a number of the feeding stuffs analyzed during 1910 are given. They are arranged in classes according to their content of crude protein. This table will be of interest to those who prepare their own rations for feeding purposes, as it will give some idea as to the average content of protein, fat and fiber found in the brands of feeding stuffs analyzed during 1910, together with the average retail price.

TABLE VI.—AVERAGE ANALYSIS AND RETAIL PRICE.

Name of Feeding Stuff.	Protein.	Fat.	Fiber.	Price per ton.
	Per ct.	Per ct.	Per ct.	
Class 1 (30 Per Cent.-45 Per Cent. Protein).				
Cottonseed meal,	40.11	8.18	8.73	$37 01
Linseed meal, N. P.,	36.10	2.53	8.99	33 50
Linseed meal, O. P.,	35.05	6.67	7.94	40 30
Buckwheat middlings,	31.19	8.56	3.31	32 00
Class 2 (20 Per Cent.-30 Per Cent. Protein).				
Distillers' grains (largely from corn),	29.56	12.64	11.36	33 76
Gregson's Calf Meal,	27.25	7.15	6.33	60 00
Blatchford's Calf Meal,	26.55	5.31	5.58	71 20
Malt sprouts,	25.99	2.00	12.71	25 50
Unicorn Dairy Rations,	25.77	6.92	9.06	33 63
Brewers' grains,	25.53	7.34	13.88	27 58
Ubico Union Grains Biles' Ready Dairy Rations,	24.85	8.15	9.67	34 00
Gluten feed,	23.84	4.26	6.75	30 69
Distillers' grains (largely from rye),	22.26	8.50	14.43	27 67
Corn oil meal,	21.50	13.45	7.72	34 00
Best Mixed Feed for Cows,	20.09	4.28	6.38	31 00
Class 3 (14 Per Cent.-20 Per Cent. Protein).				
Schumacher Calf Meal,	19.92	3.74	2.70	74 20
Low grade flour,	17.36	4.53	2.40	33 71
International Dairy Feed,	17.36	4.74	12.19	28 50
Wheat middlings,	17.35	5.21	5.64	30 33
Boveta Brand Cottonseed Hull and Meal Mixture,	17.25	3.50	27.75	26 50
Sugarota Dairy Feed,	17.09	6.20	10.86	27 67
Mixed feed—Wheat by-products,	16.85	5.18	7.96	28 81
Flaxo Meal,	16.69	12.20	11.82	26 50
Wheat bran,	16.37	5.14	9.78	27 66
Daisy Dairy Feed,	16.26	3.68	12.97	27 93
Crystaloid Dairy Feed,	16.24	5.60	12.29	25 67
Sucrene Dairy Feed,	16.06	4.97	12.28	26 52
Rye middlings,	16.05	3.63	5.23	27 82
Hammond Dairy Feed,	16.05	4.93	10.77	26 74
Badger Dairy Feed,	16.00	4.43	13.44	26 58
Buckwheat feed,	15.81	4.27	23.44	22 00
Quaker Dairy Molasses Feed,	15.55	4.68	12.77	28 40
Sugarine Dairy Feed,	15.53	5.15	11.79	27 14
Mixed feed—Rye by products,	15.25	3.33	4.18	28 33
Alfalfa meal,	14.76	2.35	29.90	29 00

TABLE VI.—Concluded.

Name of Feeding Stuff.	Protein.	Fat.	Fiber.	Price per ton.
	Per ct.	Per ct.	Per ct.	
Class 4 (8 Per Cent.-14 Per Cent. Protein).				
Eagle Barley Feed,	13.11	4.19	9.22	$30 00
Chickseat,	13.07	4.12	1.58	166 00
June Pasture Dairy Meal,	12.83	1.61	16.07	30 06
Wheat Middlings with admixtures,	12.72	7.64	6.90	29 50
American Poultry Feed,	12.67	5.70	4.79	37 60
Otto Weiss Alfalfa Stock Food,	12.63	3.65	9.83	34 00
Sucrene Alfalfa Horse and Mule Feed,	12.31	3.88	12.78	30 83
C. O. & B. Feed,	11.89	4.52	10.24	30 00
Laymor Hen Feed,	11.72	3.45	2.79	37 60
Eaton's Climax Grain Mixture,	11.69	3.59	2.97	48 60
Mihlmico Stock Feed,	11.69	6.10	8.08	33 00
Badger Alfalfa Horse and Mule Feed,	11.49	2.35	9.31	31 80
Wertz Mixed Feed,	11.22	5.04	4.87	30 00
Purina Mill Feed,	11.21	3.78	3.23	44 80
Red Comb Poultry Feed,	11.01	3.44	3.16	42 80
Sucrene Stock Feed,	10.91	2.90	10.19	30 00
Sterling Scratch Feed,	10.88	3.68	2.86	41 60
Schumacher Scratching Grains,	10.88	3.86	2.70	41 80
No. 1 Scratch Feed (M-H Mlg. Co.),	10.86	3.49	3.61	42 00
Blended Hen Food,	10.80	3.45	3.18	43 20
Schumacher Stock Feed,	10.79	4.50	10.12	30 53
Eclipse Poultry Food,	10.64	3.13	2.47	38 00
Peters' Arab Balanced Horse Feed,	10.56	2.96	8.09	32 70
Hominy feed,	10.49	8.78	3.98	28 29
Sterling Stock Feed,	10.47	4.96	8.78	30 41
Corn, oat and barley chops,	10.45	4.57	4.50	30 00
H. & S. Alfalfa Feed,	10.41	3.24	8.40	36 50
Corn, oat and rye chops,	10.39	3.61	3.68	34 00
Molac Horse Feed,	10.32	3.19	9.26	32 29
Flakeline,	10.25	9.35	8.57	30 00
Schumacher Little Chick Feed,	10.19	3.46	2.22	48 00
Ideal Chick and Hen Feed,	10.16	3.68	2.82	50 00
Sucrene Horse and Mule Feed,	9.83	3.87	9.65	28 71
Corn and oat chops,	9.53	4.15	3.91	30 65
Corn bran,	9.04	5.79	9.68	26 50
Star Feed,	9.00	6.84	9.23	26 25
Beet pulp,	8.94	1.16	17.71	25 87
Monarch Chop Feed,	8.94	4.47	6.00	28 50
Victor feed,	8.90	4.65	9.06	29 33
Boss Chop Feed,	8.84	4.78	7.80	29 36
Corn chops,	8.69	3.91	19.39	29 25
Maizeline,	8.66	7.13	8.98	28 75
Acme Dairy Feed,	8.66	4.65	6.64	30 00
Ordinary Feed Meal,	8.42	4.24	3.72	30 00
Toledo C. O. & B. Chop Feed,	8.42	4.76	6.37	31 67
Keystone Chop Feed,	8.38	4.84	6.46	34 00
Toledo C. O. B. K. Chop Feed,	8.35	4.92	6.48	32 30
M. D. Chop Feed,	8.17	4.33	7.20	28 55
Class 5 (5 Per Cent.-8 Per Cent. Protein).				
Buffalo Cereal Co's. Chop Feed,	7.00	3.78	12.57	32 00
Prime Cottonseed Feed,	6.35	2.11	32.48	21 50

COMPARISON OF THE COST OF VARIOUS FEEDING STUFFS.

The following table (No. VII), has been prepared in an effort to show the actual amount of protein and fat which could be obtained for one dollar at the prices given to our Special Agents at the time the samples of feeding stuffs were obtained.

TABLE VII.—POUNDS OF PROTEIN AND FAT OBTAINED IN FEEDING STUFFS FOR ONE DOLLAR, AT CURRENT RETAIL PRICES.

Name of Feeding Stuff.	Protein.	Fat.
Class 1 (30 Per Cent.-45 Per Cent. Protein).		
Cottonseed meal,	21.68	4.42
Linseed meal, N. P.,	18.75	1.31
Linseed meal, O. P.,	17.39	3.31
Buckwheat middlings,	19.49	5.36
Class 2 (20 Per Cent.-30 Per Cent. Protein).		
Distillers' grains (largely from corn),	17.51	7.49
Gregson's Calf Meal,	9.08	2.38
Blatchford's Calf Meal,	7.46	1.49
Malt sprouts,	20.39	1.57
Unicorn Dairy Rations,	15.33	4.12
Brewers' grains,	18.55	5.33
Ubiko Union Grains Biles' Ready Dairy Rations,	14.62	4.79
Gluten feed,	15.54	2.78
Distillers' grains (largely from rye),	16.03	6.14
Corn oil meal,	12.65	7.91
Best Mixed Feed for Cows,	12.96	2.76
Class 3 (14 Per Cent.-20 Per Cent. Protein).		
Schumacher Calf Meal,	5.37	2.36
Low grade flour,	10.30	2.69
International Dairy Feed,	12.18	3.33
Wheat middlings,	11.44	3.44
Boveta Brand Cottonseed Hull and Meal Mixture,	13.02	2.64
Sugarota Dairy Feed,	12.35	4.48
Mixed feed—Wheat by-products,	11.70	3.60
Flaxo Meal,	12.60	9.21
Wheat bran,	11.84	3.72
Daisy Dairy Feed,	11.64	2.64
Crystaloid Dairy Feed,	12.65	4.36
Sucrene Dairy Feed,	12.11	3.75
Rye middlings,	11.54	2.61
Hammond Dairy Feed,	12.00	3.69
Badger Dairy Feed,	12.04	3.33
Buckwheat feed,	14.37	3.88
Quaker Dairy Molasses Feed,	10.96	3.30
Sugarine Dairy Feed,	11.44	3.30
Mixed feed—Rye by-products,	10.77	2.35
Alfalfa meal,	10.18	1.62
Class 4 (8 Per Cent.-14 Per Cent. Protein).		
Eagle Barley Feed,	8.74	2.79
Chickseat,	1.57	4.96
June Pasture Dairy Meal,	8.54	1.07
Wheat middlings with admixtures,	8.62	5.18
American Poultry Feed,	6.74	3.06
Otto Weiss Alfalfa Stock Food,	7.43	2.15
Sucrene Alfalfa Horse and Mule Feed,	8.12	2.56
C. O. & B. Feed,	7.93	3.01
Laymor Hen Feed,	6.23	1.84
Eaton's Climax Grain Mixture,	4.81	1.48
Mihimico Stock Feed,	7.09	3.70
Badger Alfalfa Horse and Mule Feed,	7.23	1.48
Wertz Mixed Feed,	7.48	3.36
Purina Mill Feed,	5.00	1.69
Red Comb Poultry Feed,	5.15	1.61
Sucrene Stock Feed,	7.27	1.93
Sterling Scratch Feed,	5.23	1.77
Schumacher Scratching Grains,	5.20	1.84
No. 1 Scratch Feed (M.-H. Mlg. Co.),	5.17	1.66
Blended Hen Food,	5.00	1.60
Schumacher Stock Feed,	7.07	2.95
Eclipse Poultry Food,	5.60	1.65
Peters' Arab Balanced Horse Feed,	6.46	1.81
Hominy feed,	7.42	6.21
Sterling Stock Feed,	6.89	3.26
Corn, oat and barley chops,	6.97	3.05
H. & S. Alfalfa Feed,	5.70	1.78
Corn, oat and rye chops,	6.11	2.12
Molac Horse Feed,	6.39	1.98
Flakeline,	6.83	6.23

TABLE VII.—Concluded.

Name of Feeding Stuff.	Protein.	Fat.
Schumacher Little Chick Feed,	4.25	1.44
Ideal Chick and Hen Feed,	4.06	1.47
Sucrene Horse and Mule Feed,	6.85	2.70
Corn and oat chops,	6.22	2.71
Corn bran,	6.82	4.37
Star Feed,	6.86	5.21
Beet pulp,	6.91	0.90
Monarch Chop Feed,	6.27	3.14
Victor Feed,	6.07	3.17
Boss Chop Feed,	6.02	3.26
Corn Chops,	5.94	2.67
Maizeline,	6.02	4.96
Acme Dairy Feed,	5.77	3.10
Ordinary Feed Meal,	5.61	2.83
Toledo C. O. & B. Chop Feed,	5.32	3.01
Keystone Chop Feed,	4.08	2.85
Toledo C. O. B. K. Chop Feed,	5.17	3.05
M. D. Chop Feed,	5.72	3.08
Class 5 (5 Per Cent.-8 Per Cent. Protein).		
Buffalo Cereal Co's. Chop Feed,	4.38	2.36
Prime Cottonseed Feed,	5.91	1.96

COMPOSITION OF FEEDING STUFFS AND THEIR COEFFICIENTS OF DIGESTIBILITY.

In the preparation of a balanced ration for the proper feeding of stock, it is necessary to know the average composition of the feeding stuffs which are offered for sale, or which are desired to be used. In previous bulletins a table has been given showing the average composition of a number of feeding stuffs, grains and by-products, and inasmuch as this has been of assistance to those desiring to etimate rations, this table is included in this report.

The analyses of some of the brands of feeding stuffs given will vary from time to time within narrow limits. The elements or groups of nutritive substances which are determined in the analysis of a feeding stuff are usually the moisture, ash, crude protein, crude fat, crude fiber and nitrogen-free extract. The sum of the crude fiber and nitrogen-free extract constitute the carbohydrates.

The coefficients of digestibility found in the table were obtained by actual feeding experiments with ruminants. A few of these have been omitted from the table, because no feeding experiments have been made with these products.

TABLE VIII.—AVERAGE COMPOSITION[1] AND DIGESTION COEFFICIENTS[2] OF SOME AMERICAN FEEDING STUFFS.

Feeding Stuff.	Composition.						Digestion Coefficients.			
					Carbohydrates.				Carbohydrates.	
	Water.	Ash.	Crude protein.	Crude fat.	Crude fiber.	Nitrogen-free extract.	Crude protein.	Crude fat.	Crude fiber.	Nitrogen-free extract.
CONCENTRATES.	%	%	%	%	%	%				
Corn,	10.9	1.5	10.4	5.0	2.0	70.2	76	86	58	93
Corn meal,	15.0	1.4	9.2	3.8	1.9	68.7	60	92	------	*93
Corn bran,	9.1	1.3	9.0	5.8	12.7	62.0	82	79	------	*80
Corn cob,	10.7	1.4	2.4	0.5	30.1	54.9	17	50	65	60
Corn and cob meal,	15.1	1.5	8.5	3.5	6.6	64.8	52	84	45	88
Hominy chop or feed,	11.1	2.5	9.8	8.3	3.8	64.5	77	82	------	*81
Corn germ meal,	8.1	1.3	11.1	7.1	9.9	62.5	81	87	------	*85
Gluten meal,	8.2	0.9	29.3	11.8	3.3	46.5	88	93	------	*87
Gluten feed,	7.8	1.1	24.0	10.6	5.3	51.2	85	83	72	87
Dried distiller's grains,†	5.4	1.7	30.8	13.3	12.0	36.8	73	95	95	------
Oats,	11.0	3.0	11.8	5.0	9.5	59.7	78	83	20	76
Oat shorts,	7.7	3.7	16.0	7.1	6.1	59.4	78	89	------	*72
Oat hulls,	7.3	6.7	3.3	1.0	29.7	52.1	39	60	------	*48
Oat bran,	7.1	5.4	12.4	5.5	16.7	52.9	------	------	------	------
Oat clips,	6.7	11.5	9.4	3.8	21.3	47.3	------	------	------	------
Wheat,	10.5	1.8	11.9	2.1	1.8	71.9	86	81	------	*94
Wheat bran,	11.9	5.8	15.4	4.0	9.0	53.9	79	68	22	69
Wheat middlings,	12.1	3.3	15.6	4.0	4.6	60.4	82	85	36	85
Wheat shorts,	11.8	4.6	14.9	4.5	7.4	56.8	82	84	------	*78
Wheat screenings,	11.6	2.9	12.5	3.0	4.9	65.1	78	78	------	*73
Barley,	10.9	2.4	12.4	1.8	2.7	69.8	70	89	50	92
Barley meal,	11.9	2.6	10.5	2.2	6.5	66.3	------	------	------	------
Barley screenings,	12.2	3.6	12.3	2.8	7.3	61.8	------	------	------	------
Brewer's grains, dry,	8.2	3.6	19.9	5.6	11.0	51.7	79	91	53	59
Malt sprouts,	10.2	5.7	23.2	1.7	10.7	48.5	80	100	34	69
Spelts,	10.0	4.1	12.5	5.5	16.7	51.2	------	------	------	------
Rye,	11.6	1.9	10.6	1.7	1.7	72.5	98	65	------	*91
Rye bran,	11.6	3.6	14.7	2.8	3.5	63.8	78	71	------	*75
Rye shorts,	9.3	5.9	18.0	2.8	5.1	59.9	66	57	------	*69
Buckwheat,	12.6	2.0	10.0	2.2	8.7	64.5	77	82	------	*67
Buckwheat bran,	10.5	3.0	12.4	3.3	31.9	38.8	60	58	------	*43
Buckwheat middlings,	13.2	4.8	28.9	7.1	4.1	41.9	76	76	------	*73
Buckwheat shorts,	11.1	5.1	27.1	7.6	8.3	40.8	78	72	------	*68
Buckwheat hulls,	13.2	2.2	4.6	1.1	43.5	35.3	46	55	------	*35
Cottonseed,	10.3	3.5	18.4	19.9	23.2	24.7	68	87	76	50
Cottonseed meal,	8.2	7.9	42.3	13.1	5.6	23.6	88	93	32	64
Cottonseed hulls,	11.1	2.8	4.2	2.2	46.3	33.4	6	79	47	34
Flax seed,	9.2	4.3	22.6	33.7	7.1	23.2	91	86	61	55
Linseed meal, old process,	9.2	5.7	32.9	7.9	8.9	35.4	89	89	57	78
Linseed meal, new process,	10.1	5.8	33.2	3.0	9.5	38.4	85	93	74	88
Flax screenings,	5.3	11.7	17.2	15.7	11.1	39.0	------	------	------	------
Flax plant refuse,	5.9	6.9	6.8	3.6	42.6	34.2	------	------	------	------
Rice,	12.4	0.4	7.4	0.4	0.2	79.2	65	75	------	*91
Rice meal,	10.2	8.1	12.0	13.1	5.4	51.2	68	85	26	86
Rice bran,	9.7	10.0	12.1	8.8	9.5	49.9	44	83	------	*76
Rice polish,	10.0	6.7	11.7	7.3	6.3	58.0	77	89	------	*88
Rice hulls,	8.2	13.2	3.6	0.7	35.7	38.6	44	86	------	*[illegible]0
Peanut meal,	10.7	4.9	47.6	8.0	5.1	23.7	90	86	------	*79
Peanut bran,	9.6	3.5	17.1	25.4	10.6	33.8	------	------	------	------
Peanut hulls,	9.0	3.4	6.6	1.6	64.8	15.1	------	------	------	------
Cocoa hulls,	4.5	13.9	18.5	3.5	16.7	42.9	------	------	------	------
Cocoanut shells ground,	8.7	0.6	1.3	0.4	49.5	39.5	------	------	------	------

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1.—Figures from Henry's "Feeds and Feeding," and Jordan's "The Feeding of Animals."

2.—Experiments with Ruminants.

*Digestion coefficients for carbohydrates (nitrogen-free extract and crude fiber estimated together).

†Largely from corn. Analyses taken from Penna. Dept. of Agr. Bulletins Nos. 135, 155, 167, 175 and 196, representing average of 30 analyses.

TABLE VIII.—Concluded.

Feeding Stuff.	Composition.						Digestion Coefficients.			
					Carbohydrates.				Carbohydrates.	
	Water.	Ash.	Crude protein.	Crude fat.	Crude fiber.	Nitrogen-free extract.	Crude protein.	Crude fat.	Crude fiber.	Nitrogen-free extract.
	%	%	%	%	%	%				
Granulated milk,	7.8	24.8	40.0	15.0	0.0	12.4	------	------	------	------
Pea meal,	10.5	2.6	20.2	1.2	14.4	51.1	------	------	------	------
Cow peas,	14.8	3.2	20.8	1.4	4.1	55.7	75.6	59.4	59.6	80.6
Kaffir corn,	13.5	1.5	10.0	3.0	1.4	70.6	------	------	------	------
Sorghum seed,	12.8	2.1	9.1	3.6	2.6	69.8	46.8	74.2	59.0	74.6
Sunflower seed,	8.6	2.6	16.3	21.2	29.9	21.4	------	------	------	------
Beet pulp, dry,‡	6.7	3.2	9.6	0.9	18.1	61.5	63	------	83	84
ROUGHAGE.										
Corn fodder,	42.2	2.7	4.5	1.6	14.3	34.7	55	74	65	73
Corn stover,	40.5	3.4	3.8	1.1	19.7	31.5	45	62	67	61
Corn silage,	79.1	1.4	1.7	0.8	6.0	11.0	53	87	------	*66
Wheat straw,	9.6	4.2	3.4	1.3	38.1	43.4	11	31	52	38
Oat straw,	9.2	5.1	4.0	2.3	37.0	42.4	30	33	54	44
Rye straw,	7.1	3.2	3.0	1.2	38.9	46.6	21	32	60	37
Barley straw,	14.2	5.7	3.5	1.5	36.0	39.0	20	42	56	54
Buckwheat straw,	9.9	5.5	5.2	1.3	43.0	35.1	------	------	------	------
Timothy hay,	13.2	4.4	5.9	2.5	29.0	45.0	48	57	52	59
Red clover hay,	15.3	6.2	12.3	3.3	24.8	38.1	49	43	48	59
Crimson clover hay,	9.6	8.6	15.2	2.8	27.2	36.6	69	44	45	62
Alsike clover hay,	9.7	8.3	12.3	2.9	25.6	40.7	66	50	53	71
Alfalfa hay (or meal),	8.4	7.4	14.3	2.2	25.0	42.7	74	39	43	66
MISCELLANEOUS.										
Dried Blood,	8.5	4.7	84.4	2.5	------	------	62	100	------	100
Meat scrap,	10.7	4.1	71.2	18.7	------	0.3	98	98	------	------

‡Analyses of 14 samples averaged Penna. Dept. of Agr. reports.
*Digestion coefficients for carbohydrates.

DISCUSSION OF THE ANALYTICAL RESULTS.

All the samples analyzed during the year were covered by the Feeding Stuff Law, Act No. 224, which became effective August 1st, 1909. Under a number of the brands of feeding stuffs discussed and after the remarks, a small table is inserted which gives the number of samples, the average analysis and the retail price found during the present year, and during a number of preceding years.

OIL CAKE MEALS.

COTTONSEED MEAL.

Analyses on Pages 42 to 47.

During the year 1910, 47 samples of cottonseed meal were analyzed, all of which were found to be guaranteed. The content of protein ranged from 36.13 per cent. to 45.13 per cent., with an average of 40.11 per cent. The fat varied from 6.15 per cent. to 12 per cent., with an average of 8.18 per cent. The average content of fiber was found to be 8.73 per cent. Quite a number of the cottonseed meals ran lower in protein than the guarantees, as will be noted in the table, and in few cases, samples were found which contained excessive amounts of cottonseed hulls, with a high content of fiber.

AVERAGE ANALYSES AND RETAIL PRICES.

	1905.	1906.	1907.	1908.	1909.	1910.
Number of samples,	1	9	11	24	34	47
Crude protein,	40.63	41.21	39.16	41.75	41.41	40.11
Crude fat,	7.09	9.09	9.55	8.79	8.69	8.18
Crude fiber,	....	....	10.16	8.39	8.15	8.73
Price per ton,	$28 00	$30 83	$31 90	$35 21	$32 51	$37 01

LINSEED MEAL.

Analyses on Pages 46 to 51.

The number of brands of linseed meal analyzed was 64, two of these being the new process linseed oil meal. The difference in these two brands of feeding stuff is due to the method used in extracting the oil from the flaxseed. In the old process the oil is extracted by hydraulic pressure, while in the new process the oil is extracted by naphtha or some other volatile solvent, which removes more fat than is removed by the old process.

Of the two samples of new process linseed meal analyzed, the protein we found to vary from 35 per cent. to 37.19 per cent., with an average of 36.10 per cent. The fat ranged from 2.40 to 2.60 per cent., with an average of 2.53 per cent., and the average fiber was 8.99 per cent.

In the old process oil meal all but one sample was found to be guaranteed. One of these samples was found to be deficient in both protein and fat and one in fat alone. The content of protein varied from 30.75 per cent. to 38 per cent., with an average of 35.05 per cent. The fat varied from 5.40 per cent. to 9.85 per cent., with an average of 6.67 per cent. and the content of fiber averaged 7.94 per cent.

Four samples of oil meal were analyzed which were placed in the table under the heading of "Linseed Meal With Admixtures," which were not true linseed meals, inasmuch as they were made from the unscreened flaxseed from which a proportion of the weed seeds had not been removed. These were found to be properly guaranteed and no deficiencies in protein and fat were detected.

The lowest protein was 26.38 per cent. and the highest, 27.19 per cent. with an average of 26.75 per cent. The fat ranged from 8.60 per cent. to 9.55 per cent., with an average of 9.11 per cent., and the content of fiber averaged 9.48 per cent.

AVERAGE ANALYSES AND RETAIL PRICES.

	New Process.						Old Process.					
	1905.	1906.	1907.	1908.	1909.	1910.	1905.	1906.	1907.	1908.	1909.	1910.
Number of samples,	2	4	2	3	5	2	10	4	23	62	41	62
Crude protein, ...	36.27	35.86	36.59	34.82	39.47	36.10	32.33	33.75	34.75	34.46	35.88	35.05
Crude fat, ...	2.76	3.06	2.94	3.75	3.14	2.53	7.12	7.26	7.23	6.94	6.90	6.67
Crude fiber, ...	....	....	7.98	8.85	8.58	8.90	....	....	8.17	8.19	7.80	7.94
Price per ton, ...	$30 50	$30 52	$33 00	$33 00	$34 20	$38 50	$38 10	$37.25	$36.57	$38.08	$38.82	$40.30

CORN OIL MEAL.

Analyses on Pages 50 and 51.

One sample of oil cake meal was received and analyzed which was corn oil meal, a by-product from the manufacture of corn oil. It is prepared by separating the germ from the whole corn, extracting the oil and grinding the pressed residue or cake into a meal. The protein was found to be 21.50 per cent., the fat, 13.45 per cent., and the fiber 7.72 per cent.

DISTILLERY AND BREWERY BY-PRODUCTS.

DISTILLERS' GRAINS.

Analyses on Pages 52 to 55.

Twenty-one samples of distillers' grains were received during the year, eighteen being distillers' grains largely from corn and the remaining three being distillers' grains largely from rye. Nineteen of these were found to be guaranteed, one was found to be deficient in protein and fat and seven were deficient in protein alone. The analysis of the distillers' grain from corn showed that the protein varied from 26.44 to 33.00 per cent., with an average of 29.56 per cent. The fat ranged from 11.00 per cent. to 14.93 per cent., with an average of 12.64 per cent., and the fiber averaged 11.36 per cent.

AVERAGE ANALYSES AND RETAIL PRICES.

	1905.	1906.	1907.	1908.	1909.	1910.
Number of samples,	4	4	8	3	11	18
Crude protein,	31.19	30.94	28.73	33.69	29.64	29.56
Crude fat,	13.08	13.04	11.76	15.24	13.14	12.64
Crude fiber,	....	....	11.13	12.17	10.87	11.36
Price per ton,	$26 66	$27 25	$30 00	$30 00	$36 18	$33 76

In the distillers' grains from rye the lowest protein was found to be 13.60 per cent. and the highest, 28.75 per cent., with an average of 22.26 per cent. The fat ranged from 8.05 per cent. to 9.20 per cent., with an average of 8.50 per cent., and the fiber averaged 14.43 per cent.

AVERAGE ANALYSES AND RETAIL PRICES.

	1909.	1910.
Number of samples,	3	3
Crude protein,	15.96	22.26
Crude fat,	9.54	8.50
Crude fiber,	15.38	14.43
Price per ton,	$28 00	$27 67

BREWERS' GRAINS.

Analyses on Pages 54 and 55.

During the year, 15 samples of brewers' dried grains were received, all of which were guaranteed. In one of these, the contents of protein and fat were found to be different and in five the protein was one per cent. below the guaranteed amount.

The content of crude protein varied from 22.06 per cent. to 29.06 per cent., with an average of 25.53 per cent. The fat varied from 6.11 per cent. to 8.38 per cent., with an average of 7.34 per cent., and the average content of fiber was 13.88 per cent.

AVERAGE ANALYSES AND RETAIL PRICES.

	1905.	1906.	1907.	1908.	1909.	1910.
Number of samples,	1	1	6	4	16	15
Crude protein,	28.50	22.50	26.34	28.19	27.21	25.53
Crude fat,	7.27	6.98	7.30	7.43	7.27	7.34
Crude fiber,	....	....	13.25	14.13	14.41	13.58
Price per ton,	$20 00	$23 00	$22 80	$28 25	$27 58	$27 53

MALT SPROUTS.

Analyses on Pages 54 to 57.

A smaller number of samples of malt sprouts were received during the year than were analyzed during 1909, only 8 being sent in by our Special Agent.

The lowest protein was found to be 23.88 per cent., the highest, 28.38 per cent., with an average of 25.99 per cent. The lowest fat was 1.53 per cent. and the highest 2.53 per cent., with an average of 2.00 per cent., and the average fiber was 12.71 per cent.

Two of these samples contained some barley and a small amount of weed seeds and one contained a considerable proportion of barley.

AVERAGE ANALYSES AND RETAIL PRICES.

	1905.	1906.	1907.	1908.	1909.	1910.
Number of samples,	1	5	6	4	17	8
Crude protein,	25.13	25.49	26.06	25.08	27.35	25.99
Crude fat,	1.58	2.12	2.04	1.98	2.07	2.00
Crude fibre,	....	....	12.33	13.15	12.92	12.71
Price per ton,	$20 00	$19 60	$24 75	$25 75	$26 21	$25 50

MAIZE BY-PRODUCTS.

GLUTEN FEED.

Analyses on Pages 56 to 61.

During the year 55 samples of gluten feed were analyzed, all but two being guaranteed. In 10 of the samples, the content of crude protein was found to be one per cent. below the amount guaranteed.

The protein varied from 18.81 per cent. to 28.06 per cent., with an average of 23.84 per cent. The fat varied from 2.40 per cent. to

6.90 per cent., with an average of 4.26 per cent., and the content of fiber averaged 6.75 per cent.

A number of these feeds were artificially colored with aniline dye, No. 85 Orange 1, No. 4 Naphthol Yellow S.

Quite a number of the sambles of gluten feed herein reported were found to be slightly acid. Other analysts have detected that gluten feeds were slightly acid, from time to time, and have so reported in their annual reports. The acidity of gluten feeds has caused some apprehension to those feeding this feeding stuff to stock, and in order to determine whether or not this acidity would be in any way harmful, several investigators have made a special study concerning this matter.

Dr. W. H. Jordan, Chemist of the New York Agricultural Experiment Station of Geneva, N. Y., in Technical Bulletin No. 16, of December, 1910, reports that "the marked acidity of gluten feeds, noted in the feeding stuffs inspection of several states during the past three years, is due to the addition of 'steep water,' a by-product obtained in the manufacture of corn products. The acidity of the 'steep water' is due to its content of amino-acids and of phosphorus compounds with an acid reaction, probably mixed phosphates and phytates. Mineral acids are present only in negligible quantities."

The results of the tests for acidity made by this Bureau showed that in several samples of gluten feeds as much as 1.75 per cent. of caustic soda was required to neutralize the acidity present. While we have been unable to make as complete a study of this subject as has been made by other investigators, the results obtained on the few samples analyzed practically corroborated the results reported by the New York Experiment Station. We were able to find mineral acids present only in very small amounts, which may be overlooked, and we found that nearly all of the acidity was caused by the presence of acid phosphates and organic compounds with an acid reaction.

AVERAGE ANALYSES AND RETAIL PRICES.

	1905.	1906.	1907.	1908.	1909.	1910.
Number of samples,	7	12	25	35	62	55
Crude protein,	23.76	25.04	24.37	24.14	25.48	23.84
Crude fat,	3.52	3.86	3.80	4.69	3.81	4.26
Crude fiber,			7.21	7.21	7.27	6.75
Price per ton,	$25 50	$25 61	$30 27	$31 09	$31 61	$30 69

HOMINY FEED.

Analyses on Pages 60 to 65.

During the year, 49 samples of hominy feed were received and analyzed, 47 of which were properly guaranteed. No deficiencies or adulterants were detected.

The determinations for protein varied from 9.19 per cent. to 12.06 per cent., with an average of 10.49 per cent. The fat varied from 5.15 to 10.90 per cent., with an average of 8.78 per cent., and the average content of fiber was 3.98 per cent.

AVERAGE ANALYSES AND RETAIL PRICES.

	1905.	1906.	1907.	1908.	1909.	1910.
Number of samples,	1	6	10	18	32	49
Crude protein,	10.44	10.78	10.18	9.84	10.39	10.49
Crude fat,	8.55	8.92	7.96	7.99	8.73	8.78
Crude fiber,			5.08	4.12	4.75	3.98
Price per ton,	$26 00	$22 50	$31 22	$30 50	$31 31	$33 29

FLAKELINE.

Analyses on Pages 64 and 65.

Only one sample of Flakeline was received, which was found to be properly guaranteed. The analysis was found to be as follows:

Protein, 10.25 per cent.; fat, 9.30 per cent., and fiber, 8.57 per cent.

MAIZELINE.

Analyses on Pages 64 to 67.

Eight samples of Maizeline were received, all of which were properly guaranteed, no deficiencies being detected. The protein varied from 8.13 per cent. to 9.38 per cent., with an average of 8.66 per cent. The fat varied from 6.45 per cent. to 8.05 per cent., with an average of 7.13 per cent., and the content of fiber averaged 8.98 per cent.

CORN BRAN.

Analyses on Pages 66 and 67.

Two samples of corn bran were received, both being guaranteed, one of which was deficient in crude fat as compared to the amount guaranteed. The protein varied from 7.94 per cent. to 10.13 per cent., with an average of 9.04 per cent. The fat varied from 2.92 per cent. to 8.65 per cent., with an average of 5.79 per cent., and the content of fiber averaged 9.68 per cent.

WHEAT OFFALS.

During the year 489 samples of feeding stuffs were received, which are classed as wheat offals, including low grade flour, wheat, middlings, wheat middlings with admixtures, mixed feed, wheat by-products and wheat bran. Where these products are composed only of wheat offals or by-products, the Feeding Stuff Law does not require that they be guaranteed for protein, fat and fiber. The majority of these, however, were guaranteed for these constituents, and in only one case where such guarantees were given, a deficiency was noticed, that being in the case of the content of crude fat, which was found to be more than one-half of one per cent. below the guarantee.

LOW GRADE FLOUR.

Analyses on Pages 66 to 69.

Twenty-four samples of low grade flour were received, 19 being guaranted, only one of which was found to be deficient in protein. No adulterations were detected. The protein varied from 13.29 per cent. to 19.94 per cent., with an average of 17.36 per cent. The fat ranged from 2.48 per cent. to 6.70 per cent., with an average of 4.53 per cent., and the content of fiber averaged 2.40 per cent.

AVERAGE ANALYSES AND RETAIL PRICES.

	1905.	1906.	1907.	1908.	1909.	1910.
Number of samples,	7	3	15	24	18	24
Crude protein,	15.51	14.38	17.07	17.41	17.18	17.36
Crude fat,	3.61	3.08	4.44	4.54	5.11	4.53
Crude fiber,	----------	----------	2.82	2.58	4.88	2.40
Price per ton,	$29 86	$25 66	$33 96	$33 60	$33 11	$33 71

WHEAT MIDDLINGS.

Analyses on Pages 68 to 83.

One hundred and ninety-three samples of wheat middlings were received during the year, 126 of which were guaranteed. These samples were as a rule free from adulterants or any foreign substances, except in a few cases as noted in the table, traces of weed seeds were found present. In only two samples were weed seeds found to be present in excess.

The protein ranged from 13.44 per cent. to 20.19 per cent., with an average of 17.35 per cent. The fat ranged from 3.08 per cent. to 6.75 per cent., with an average of 5.21 per cent., and the content of fiber averaged 5.64 per cent.

AVERAGE ANALYSES AND RETAIL PRICES.

	1905.	1906.	1907.	1908.	1909.	1910.
Number of samples,	49	26	87	162	173	193
Crude protein,	15.23	16.64	17.17	16.75	16.93	17.35
Crude fat,	4.02	4.83	5.24	4.88	5.10	5.21
Crude fiber,			5.97	5.22	5.38	5.64
Price per ton,	$26 22	$24 17	$31 14	$31 80	$31 43	$30 33

WHEAT MIDDLINGS WITH ADMIXTURES.

Analyses on Pages 82 and 83.

Ten samples of this class of feeding stuffs were received, all but one of which were properly guaranteed. The admixtures used with the wheat middlings were hominy feed, rye, corn middlings, corn meal, palm oil, and in one case, ground corn and corn cobs.

The Feeding Stuff Law prohibits ground corn cobs from being mixed with wheat products, and therefore, this product was sold in violation of the law. The protein in these admixtures varied from 11.75 per cent. to 17.75 per cent., and the fat varied from 3.25 per cent. to 8.50 per cent.

MIXED FEED: WHEAT BY-PRODUCTS.

Analyses on Pages 82 to 85.

Sixteen samples of wheat mixed feeds were received, all of which were guaarnteed. No adulterations were detected. The protein varied from 16.00 per cent. to 19.44 per cent., with an average of 16.85 per cent. The fat varied from 4.75 per cent. to 5.60 per cent., with an average of 5.18 per cent., and the content of fiber averaged 7.96 per cent.

AVERAGE ANALYSES AND RETAIL PRICES.

	1905.	1906.	1907.	1908.	1909.	1910.
Number of samples,	4	5	16	18	7	16
Crude protein,	13.99	15.74	16.19	16.55	16.39	16.85
Crude fat,	4.43	5.10	4.91	4.82	4.83	5.18
Crude fiber,			7.49	7.64	7.65	7.96
Price per ton,	$24 75	$24 80	$29 18	$30.72	$24 57	$28 81

WHEAT BRAN.

Analyses on Pages 84 to 101.

Two hundred and forty-six samples of wheat bran were received, 178 of which were guaranteed. In the case where these guarantees were stated, only one was found to be less than one-half of one per cent. below the guarantee for fat. As a rule, the samples of wheat bran were remarkably free from adulteration of foreign substances. In one case, a small amount of oat hulls and corn cockle was detected, and in another, a considerable amount of chaff and a small amount of flaxseed and corn cockle were found to be present.

The protein ranged from 14.50 per cent to 18.75 per cent., with an average of 16.37 per cent. The fat ranged from 3.58 per cent. to 6.5 per cent., with an average of 5.14 per cent., and the fiber averaged 9.78 per cent.

AVERAGE ANALYSES AND RETAIL PRICES.

	1905.	1906.	1907.	1908.	1909.	1910.
Number of samples,	59	26	75	258	178	246
Crude protein,	14.30	14.85	15.74	15.57	15.78	16.37
Crude fat,	4.48	4.79	5.02	4.96	4.99	5.14
Crude fiber,			9.72	9.50	10.08	9.78
Price per ton,	$23 74	$22 44	$28 66	$29 25	$28 54	$27 66

RYE OFFALS.

Analyses on Pages 100 to 103.

Fourteen samples of rye by-products were received, 11 of which were classed as rye middlings and 3 of which were classed as rye mixed feed. Only 6 of these products were guaranteed. No deficiencies or adulterations were detected. In the rye middlings the protein varied from 14.69 per cent. to 17.31 per cent., with an average of 16.05 per cent. The fat varied from 3.05 per cent. to 3.88 per cent., with an average of 3.63 per cent., and the fiber averaged 5.23 per cent.

In the rye mixed feeds, the protein varied from 14.13 per cent. to 16.38 per cent., with an average of 15.25 per cent. The fat varied from 3.20 per cent. to 3.55 per cent., with an average of 3.33 per cent. The content of fiber averaged 4.13 per cent.

WHEAT AND RYE OFFALS.

Analyses on Pages 102 and 103.

The number of samples included in this class was 8, 5 of which were wheat and rye middlings, with an average of protein, 16.36 per cent.; fat, 4.54 per cent., and fiber 5.22 per cent., and 3 being wheat and rye brans, the average analysis being, protein, 17.06 per cent.; fat, 4.97 per cent., and fiber 8.53 per cent. All but one of these products were properly guaranteed and no deficiencies or adulterations were detected.

BUCKWHEAT OFFALS.

Analyses on Pages 102 to 105.

During the year one sample of feeding stuffs was received which was classed as buckwheat middlings, the analysis being found to be protein, 31.19 per cent.; fat, 8.58 per cent.; fiber, 3.31 per cent. Five samples were received which were classed as buckwheat feeds, the average analysis being protein, 15.81 per cent.; fat, 4.27 per cent.; fiber, 23.44 per cent. Only one of the buckwheat offals was found to be properly guaranteed.

The Feeding Stuffs Law exempts buckwheat middlings from being guaranted for protein, fat and fiber; but, in the case of buckwheat feeds, these guarantees are required.

ALFALFA MEAL.

Analyses on Pages 104 to 107.

Twenty-five samples of alfalfa meals were received during the year, 4 of which were not guaranteed for protein, fat and fiber, as required by the Feeding Stuff Law.

One sample was a mixture of alfalfa, brewers' grains and molasses, and five were alfalfa mixed with fine syrup. In the pure alfalfa meals, excluding the one which was mixed with brewers' grains and molasses, and the five to which syrup had been added, the protein varied from 11.10 per cent. to 18.75 per cent., with an average of 14.76 per cent. The fat varied from 1.65 per cent. to 3.90 per cent., with an average of 2.35 per cent., and the fiber averaged 29.99 per cent.

AVERAGE ANALYSES AND RETAIL PRICES.

	1908.	1909.	1910.
Number of samples,	11	10	25
Crude protein,	15.12	15.47	14.76
Crude fat,	2.36	2.62	2.35
Crude fiber,	32.68	27.66	29.99
Price per ton,	$28 60	$32 00	$29 00

BEET PULP.

Analyses on Pages 106 and 107.

During the year 11 samples of beet pulp were received, which were properly guaranteed, no deficiencies being detected.

The protein in this product ranged from 8.13 per cent. to 9.31 per cent., with an average of 8.94 per cent. The fat varied from 0.80 per cent. to 1.45 per cent., with an average of 1.16 per cent., and the fiber averaged 17.71 per cent.

AVERAGE ANALYSES AND RETAIL PRICES.

	1907.	1908.	1909.	1910.
Number of samples,	3	4	4	11
Crude protein,	8.90	9.56	9.63	8.94
Crude fat,	0.69	0.92	1.01	1.16
Crude fiber,	19.44	19.40	18.04	17.71
Price per ton,	$23 33	$24 75	$25 12	$28 50

MIXED FEEDS: PROPRIETARY AND OTHERWISE.

During the year, 655 samples of feeding stuffs were received and analyzed, which are grouped under the above heading. Six subdivisions of these feedings stuffs have been made, and the samples received have been grouped in the table under the follownig headings:

Proprietary dairy and stock feeds.
Proprietary horse and mule feeds.
Calf meals.
Miscellaneous feeds.
Miscellaneous chop feeds and
Proprietary poultry feeds.

PROPRIETARY DAIRY AND STOCK FEEDS.

Analyses on Pages 106 to 163.

During the year the number of samples of this class of feeding stuffs received was 285, all of which were guaranteed for protein, fat and fiber. One sample was found to be more than one per cent below the guarantee for protein and one-half of one per cent. below the guarantee for fat. In 32 samples, the protein was one per cent.

or more below the guarantee, and in eight samples, the content of fat was one-half of one per cent. or more below the guarantee. The Feeding Stuffs Law prohibits the sale of this class of goods when containing more than nine per cent. of crude fiber, where oat hulls, corn cobs, elevator chaff and flax plant refuse are used in the mixture. It also prohibits the use of weed seeds in such products. By referring to the table, it will be noticed that in a number of cases the content of crude fiber exceeded the restricted amount, and also that in a number of samples weed seeds were found to be present in varying proportions. No samples were found during the year which were adulterated with peanut shucks or rice hulls, which was found to be the case in the inspection work during previous years. The chemical analysis and composition of these brands of feeding stuffs will be found in the table as indicated, and among the brands received are included:

Acme Feed, Altoona Feed Mills Dairy Feed, Sucrene Dairy Feed, Ubiko Union Grains Biles Ready Dairy Rations, Unicorn Dairy Rations, Crystaloid Dairy Feed, Emporium Feed, No. 1 Mixed Feed, Globe Mill Feed, Globe Elevator Co's Mill Feed and Dairy Mixed Feed, Good Luck Feed, Boss Chop Feed, Daisy Dairy Feed, Sterling Stock Feed, H. & S. Alfalfa Feed, Harper's Mixed Alfalfa Stock Feed, Algrane Mixed Feed, Eclipse Feed, Husted Molasses Feed and Stock Feed, International Dairy Feed, International Special Molasses Feed, Badger Dairy Feed, Badger Stock Feed, Nature's Stock Feed, Best Mixed Feed for Cows, Mihimico Stock Feed, Sugarota Dairy Feed, Otto Weiss' Alfalfa Dairy Food, Alfalfa Hog Food, Alfalfa Oats Food and Alfalfa Stock Food, P. & S. Feed, Pioneer Stock Feed, Pollock's C. O. & B. Feed, Quaker Oats Co's. C. O. & B. Feed, Quaker Dairy Molasses Feed, Schumacher Stock Feed, Victor Feed, White Diamond Feed, Scranton Flour & Grain Co's Stock Food, Sugarine Dairy Feed, Star Feed, Hammond Dairy Feed, Molasses Corn Flakes and Diamond Cut Stock Feed.

PROPRIETARY HORSE AND MULE FEEDS.

Analyses on Pages 162 to 171.

Fifty-two samples of feeding stuffs were received and analyzed, which are classed as Proprietary Horse and Mule Feeds. All but one of these was guaranteed for protein, fat and fiber. In two samples the protein was found to be one or more per cent. below the amount guaranteed, and in six samples the content of fat was found to be in excess of one-half of one per cent. below the amount guaranteed.

In a number of these samples weed seeds were found to be present in varying amounts, as was found to be the case in several of the samples of the dairy and stock feeds. Their chemical analysis and composition will be found in the table as indicated above. The following brands are included in this class:

Alfalfa Horse Feed, Altoona Feed Mills Horse Chop, Acme Horse Feed No. 1, Sucrene Alfalfa Horse and Mule Feed, Sucrene Horse and Mule Feed, Acme Horse Feed, Ubiko Horse and Stock Feed, several brands of horse chop manufactured by Cannonsburg Roller Mills, Chester Milling Co., E. D. Clark, Hagey Bros., Klepser Bros., and S. F. Phillips & Son, Daisy Horse Feed, Badger Alfalfa Horse and Mule Feed, Best Feed for Horses, Alfalfa Horse Feed, McMahan's Prepared Horse Feed, Sugarota Horse Feed, Buffalo Horse Feed, Primo Sylva Horse Feed, Peter's Arab Balanced Horse Feed, Molac Horse Feed, Sugarine Horse Feed, and Chicago Alfalfa Horse and Mule Feed.

CALF MEALS.

Analyses on Pages 170 and 171.

Eleven samples of calf meals were received and analyzed, all of which were guaranteed for protein, fat and fiber, including four samples of Blatchford's Calf Meal, one sample of Gregson's Calf Meal and six samples of Schumacher Calf Meal. No marked deficiencies in protein and fat were detected in these samples. In a few cases the composition was not given, as required.

MISCELLANEOUS FEEDS.

Analyses on Pages 170 to 175.

Twenty-seven samples were received which were classed as Miscellaneous Feeds, all but two of which were guaranteed for protein, fat and fiber. In three samples the protein was found to be one per cent. or more below the guarantee and in one sample the fat was found to be in excess of one-half of one per cent below the guarantee. The analysis and composition of these brands will be found in the table as indicated above. The following brands are included:

Flaxo Meal, No. 1 Mixed Feed, Graino Barley Feed, Imperial Feed Meal, Pure Eagle Barley Feed, Kornfalfa Feed, Milk and Muscle Producer, Special Pig Grower, Prime Cottonseed Feed, Boveta Brand Cottonseed Hull and Meal Mixture, Ordinary Feed Meal and several other mixed feeds.

MISCELLANEOUS CHOP FEEDS.

Analyses on Pages 174 to 191.

Under this heading are grouped 169 samples of feeding stuffs which were analyzed during the year, 99 of which were guaranteed. They include 16 samples of corn chop, averaging protein, 8.69 per cent., fat, 3.91 per cent., fiber, 19.39 per cent.; 52 samples of corn and oats chop, averaging protein, 9.53 per cent, fat, 4.15 per cent., fiber, 3.91 per cent.; 7 samples of corn, oats and barley chops, averaging protein, 10.45 per cent., fat, 4.57 per cent., fiber, 4.50 per cent.; 10 samples of corn, oats and rye chops, averaging protein, 10.39 per cent., fat, 3.61 per cent., fiber, 3.68 per cent. and 84 samples of other feeds including various mixtures of corn, oats, wheat, buckwheat, rye, barley, oat hulls, hominy feed, etc. The chemical analysis and composition of these chop feeds will be found in the table, as indicated above. Only a few deficiencies were detected.

PROPRIETARY POULTRY FOODS.

Analyses on Pages 190 to 209.

The number of samples of Proprietary Poultry Foods received and analyzed during the year was 111, 96 of which were guaranteed. In four of these samples the protein was in excess of one per cent. below and the fat in excess of one-half of one per cent. below the guarantees. In three samples, the protein was in excess of one per cent. below the guarantee, and in two samples, the fat was in excess of one-half of one per cent. below the guaranteed amount.

Among the brands of poultry feeds included in this class are:

Eclipse Poultry Food, Blended Hen Food, Chick Feed Invigorator, Blatchford's Poultry Meats, Bourbon Scratch Feed, Chickseat, Superior Hen Food, Superior Chick Food, Globe Scratch Feed, White Cross Scratch Feed, Eaton's Climax Grain Mixture, Eaton's Perfection Mash Mixture, Laymor Hen Feed, Red Comb Meat Mash, Red Comb Poultry Feed, Neverfail Egg Producer, Sterling Chick Feed, Sterling Scratch Feed, Ideal Chick and Hen Feed, Martin's Mixed Poultry Feed and Peep Feed, Best Mixed Grains for Chickens, Purina Mill Feed Chick Feed, Purina Mill Feed Scratch Size, American Poultry Feed, Red Hen Scratching Grains, American Hen Scratching Grains, Schumacher Little Chick Feed, Schumacher Scratching Grains, Universal Mill Feed, Red Hen Scratch Feed, and several other brands of mixed hen feeds, chicken feeds and pigeon feeds. The analysis and composition will be found in the table as indicated above.

ANIMAL BY-PRODUCTS.

Analyses on Pages 208 to 211.

Only eight samples of feeding stuffs under this class were received and analyzed during the year, all but one of which were found to be guaranteed. In two samples, the content of crude protein was found to be in excess of one per cent. below the guaranteed amount. These products are principally composed of ground beef scraps, pork cracklings and ground meat. The analyses and compositions will be found in the table as indicated above.

CONDIMENTAL STOCK AND POULTRY FOODS.

Analyses on Pages 210 to 213.

Of this class of goods nine samples were received and analyzed, six of which were found to be guaranted. A large number of condimental stock and poultry tonics are sold in Pennsylvania which are not covered by the law, inasmuch as no feeding or nutritive value is claimed for them, and also as they are sold practically as tonics or regulators. Of the nine samples received, only two were found which did not have the composition stated upon the packages in which the sample was sold. The analysis of these samples, together with the composition or list of ingredients of which they are composed, will be found in the table as indicated above.

ANALYSIS OF SAMPLES OF FEEDING STUFFS COLLECTED BY SPECIAL AGENTS.

The following table (No. IX), shows the partial chemical analyses and the results of the microscopical examinations, together with the retail price of the 1,500 samples of feeding stuffs which were secured by Special Agents of the Department during 1910. The samples are classed in the table under the headings as follows:

Oil Cake Meals, including cottonseed meal, linseed meal, linseed meal with admixtures and corn oil meal.

Distillery and Brewery By-Products, including distillers' grains, brewers' grains and malt sprouts.

Maize By-Products, including gluten feed, hominy feed, flakeline. maizeline and corn bran.

Wheat Offals, including low grade flour, wheat middlings, wheat middlings with admixtures, mixed feed:—wheat by-products and wheat bran.

Rye Offals, including rye middlings, rye bran and mixed feed:—rye by-products.

Wheat and Rye Offals, including wheat and rye bran and middlings.

Buckwheat Offals, including buckwheat middlings and feeds.

Alfalfa Meals.

Beet Pulp.

Mixed Feeds, including proprietary dairy and stock feeds, proprietary horse and mule feeds, calf meals, miscellaneous feeds, chop feeds and proprietary poultry foods.

Animal By-Products.

Condimental Stock and Poultry Foods.

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
	OIL CAKE MEALS.					
	Cottonseed Meal.					
				Per ct.	Per ct.	Per ct.
3007	------ H. E. Bridger & Co., Memphis, Tenn.	St. Marys, L. Ritter, ------	207	7.36	39.56	33.5–41
5110	Owl Brand, F. W. Brode & Co., Memphis, Tenn.	Doylestown, H. S. Beidler,-	1410	7.41	42.00	41–43
3824	Owl Brand, F. W. Brode & Co., Memphis, Tenn.	Alba, S. S. Cosper, --------	124	7.89	40.69	41–43
3872	Owl Brand, F. W. Brode & Co., Memphis, Tenn.	Knoxville. Deerfield Milling Co.	172	7.34	40.00	41–43
3881	Owl Brand, F. W. Brode & Co., Memphis, Tenn.	Coudersport, Gates Bros.,-	181	6.53	44.31	41–43
4825	Owl Brand, F. W. Brode & Co., Memphis, Tenn.	Danville, Haney-Frazier Milling Co.	1125	6.40	40.63	41–43
4427	Owl Brand, F. W. Brode & Co., Memphis, Tenn.	Mechanicsburg, A. B. Harnish.	727	6.33	45.13	41–43
4089	Owl Brade, F. W. Brode & Co., Memphis, Tenn.	New Kensington, J. A. Hawk.	389	7.35	42.06	41–43
4054	Owl Brand, F. W. Brode & Co., Memphis, Tenn.	Butler, H. J. Klingler & Co.	1254	7.36	41.69	41–43
4788	Owl Brand, F. W. Brode & Co., Memphis, Tenn.	Milton, C. H. McMahon,--	1088	7.41	39.25	41–43
5090	Owl Brand, F. W. Brode & Co., Memphis, Tenn.	Pottstown, W. H. Saylor & Son.	1390	7.46	40.50	41–43
4053	Owl Brand, F. W. Brode & Co., Memphis, Tenn.	Pittsburg, The I. W. Scott Co.	353	7.14	41.31	41–43
4730	Owl Brand, F. W. Brode & Co., Memphis, Tenn.	Du Bois, A. T. Sprankle,--	1030	8.55	41.50	41–43
3834	Owl Brand, F. W. Brode & Co., Memphis, Tenn.	Quakertown, T. & J. Strawn.	134	7.49	42.75	41–43
		Average, ----------------	--------	7.28	41.68	--------
3771	Buckeye, Buckeye Cotton Oil Co., Augusta, Ga.	New Milford, H. B. Carpenter & Co.	71	8.08	37.94	39–41
5051	Buckeye Prime, Buckeye Cotton Oil Co., Augusta, Ga.	Union City, Union Coal and Supply Co.	1351	9.06	39.75	39–41
		Average, ----------------	--------	8.57	38.85	--------
4072	Green Diamond, Chapin & Co., Buffalo, N. Y.	Kittanning, D. H. Boarts,-	372	6.85	43.69	41.00
4082	Green Diamond, Chapin & Co., Buffalo, N. Y.	Kittanning, J. A. Gault & Co.	382	7.45	43.75	41.00
		Average, ----------------	--------	7.15	43.72	--------
4360	------ Farmers' Cotton Oil and Trading Co., Uniontown, Ala.	Gettysburg, C. M. Wolf, Jr.	660	7.92	39.38	38.00
5064	Dixie Brand, Humphreys, Godwin & Co., Memphis, Tenn.	Erie, A. P. Allen, ---------	1364	7.55	41.69	38.50–43
3846	Dixie Brand, Humphreys, Godwin & Co., Memphis, Tenn.	Wellsboro, Geo. C. & F. A. Brooks.	146	8.29	38.50	38.50–43
5086	Dixie Brand, Humphreys, Godwin & Co., Memphis, Tenn.	Potstown, A. K. Kulp, ----	1386	7.56	37.81	38.62–43
4090	Dixie Brand, Humphreys, Godwin & Co., Memphis, Tenn.	Mercer, Mercer Milling and Lumber Co., Ltd.	1290	9.13	38.19	38.50–43
4015	Dixie Brand, Humphreys, Godwin & Co., Memphis, Tenn.	Charleroi, R. C. Mountser,	345	8.73	36.81	38.50–43

FEEDING STUFFS COLLECTED IN 1910.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
8.03	6-7	10.00	11-12	$35 00	....	Cottonseed meal,	3907
7.83	6-8	8.47	10.00	34 00	Decorticated cottonseed,	As certified,	5110
8.25	6-8	8.02	10.00	1 90	Decorticated cottonseed,	As certified,	3824
8.28	6-8	9.80	10.00	1 90	Decorticated cottonseed,	As certified,	3872
9.65	6-8	6.28	10.00	1 90	Decorticated cottonseed,	As certified,	3881
7.15	6-8	10.75	10.00	2 00	Decorticated cottonseed,	As certified,	4825
8.50	6-8	6.25	10.00	36 00	Decorticated cottonseed,	As certified,	4427
10.25	6-8	5.03	10.00	2 00	Decorticated cottonseed,	As certified,	4089
12.00	6-8	5.00	10.00	1 90	Decorticated cottonseed,	As certified,	4954
8.00	6-8	9.25	10.00	2 00	Decorticated cottonseed,	As certified,	4783
9.30	6-8	8.70	10.00	1 80	Decorticated cottonseed,	As certified,	5090
8.73	6-8	8.60	10.00	39 00	Decorticated cottonseed,	As certified,	4053
7.85	6-8	7.02	10.00	2 00	Decorticated cottonseed,	As certified,	4730
8.15	6-8	6.21	10.00	1 85	Decorticated cottonseed,	As certified,	3834
8.76	....	7.64	....	38 00			
7.85	6-7.50	10.00	8-10	34 00	....	Cottonseed meal,	3771
7.00	6.50-7	10.42	8-10	1 75	....	Cottonseed meal,	5051
7.43	....	10.21	....	34 50			
9.80	8.00	5.42	10.00	2 10	....	Cottonseed meal,	4772
8.88	8.00	5.95	10.00	2 15	....	Cottonseed meal,	4082
9.34	....	5.68	....	42 50			
8.63	....	9.80	....	1 80	Cottonseed,	Cottonseed meal,	4360
8.73	7-9	7.62	10-13	35 00	Pressed cottonseed,	As certified,	5064
9.05	7-9	8.54	10-13	37 00	Pressed cottonseed,	As certified,	3846
8.00	6-8	8.30	8-12	1 75	Pressed cottonseed,	As certified,	5066
7.08	7-9	10.35	10-13	34 00	Pressed cottonseed,	As certified,	4991
7.00	7-9	10.57	10-13	36 00	Pressed cottonseed,	As certified,	4045

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
4011	Dixie Brand, Humphreys, Godwin & Co., Memphis, Tenn.	Scottdale, J. E. Pritts, ...	311	7.19	40.13	38.50–43
3853	Dixie Brand, Humphreys, Godwin & Co., Memphis, Tenn.	Wellsboro, B. Schrader & Son.	153	8.15	41.13	38.50–43
4374	Dixie Brand, Humphreys, Godwin & Co., Memphis, Tenn.	Chambersburg, George Walker.	674	7.00	36.63	38.50–43
4183	Dixie Brand, Humphries, Godwin & Co., Memphis, Tenn.	Christiana, B. Frank Walter.	483	8.32	42.13	38.50–43
		Average, ...	....	7.99	39.22	....
3865	...... The Hunter Bros. Milling Co., St. Louis, Mo.	Knoxville, J. H. Burch, ..	165	7.76	41.94	41.00
3739	Prime, The Hunter Bros. Milling Co., St. Louis., Mo.	Carrolltown, W. A. Eckenrode.	39	7.71	41.88	41.00
3730	Prime, The Hunter Bros., Milling Co., St. Louis., Mo.	Patton, F. E. Farabaugh,	30	7.42	42.44	41.00
		Average, ...	....	7.63	42.09	....
4752	"Baltimore Brand," W. Newton Smith, Baltimore, Md.	Sunbury, Blank & Gottshall.	1052	7.49	37.63	41.00
4173	"Baltimore Brand," W. Newton Smith, Baltimore, Md.	Elizabethtown, E. H. Lehman.	473	8.25	39.69	41.00
4176	"Baltimore Brand," W. Newton Smith, Baltimore, Md.	Elizabethtown, A. W. Martin.	476	8.35	39.00	41.00
5119	Dirigo Brand, W. Newton Smith, Baltimore, Md.	Windber, Weaver & Berkey,	1419	6.70	41.00	41–45
		Average, ...	....	7.69	39.33	....
3767	Choice Bolted, J. E. Soper Co., Boston, Mass.	Montrose, Slatter & Roberts.	67	6.57	40.00	40–42
4118	Star Brand, J. Lindsay Wells Co., Memphis, Tenn.	Lancaster, John W. Eshelman.	418	7.21	39.19	41.00
3874	Star Brand, J. Lindsay Wells Co., Memphis, Tenn.	Coudersport, Eulalia Milling Co.	174	7.04	39.06	41.00
4367	Star Brand, J. Lindsay Wells Co., Memphis, Tenn.	Greencastle, Greencastle Elevator Co.	667	7.96	40.06	41.00
4978	Star Brand, J. Lindsay Wells Co., Memphis, Tenn.	Harmony, Harmony Cereal Co.	1278	8.47	38.50	41.00
4201	Star Brand, J. Lindsay Wells Co., Memphis, Tenn.	York, Miller Bros., ...	501	8.54	38.63	38.62
4531	Star Brand, J. Lindsay Wells Co., Memphis, Tenn.	Allentown, Geo. B. Shelly Est.	831	7.29	36.72	41.00
4219	Star Brand, J. Lindsay Wells Co., Memphis, Tenn.	York, H. H. Smyser, ...	519	7.80	36.13	41.00
3750	Star Brand, J. Lindsay Wells Co., Memphis, Tenn.	Johnstown, Swope Bros., ...	50	8.07	39.10	41.00
4855	Star Brand, J. Lindsay Wells Co., Memphis, Tenn.	Bellefonte, C. Y. Wagner, ..	655	8.07	38.00	41.00
4297	Star Brand, J. Lindsay Wells Co., Memphis, Tenn.	Punxsutawney, G. A. Weiss & Bro.	597	6.87	38.44	41.00

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
8.03	7-9	10.18	10-13	$38 00	Pressed cottonseed, -------	As certified, ----------	4011
9.10	7-9	8.41	10-13	36 00	Pressed cottonseed, -------	As certified, ----------	3858
7.15	7-9	10.65	10-13	1 70	Pressed cottonseed, -------	As certified, ----------	4874
8.18	7-9	7.19	10-13	38 00	Pressed cottonseed, -------	As certified, ----------	4183
8.04	--------	9.09	--------	35 89	--------------------------------		
6.37	7.50	10.97	14.00	2 00	Prime cottonseed meal,---	As certified, ----------	3865
8.00	7.50	8.35	14.00	1 95	--------------------------------	Cottonseed meal, -----	3739
7.60	7.50	8.45	14.00	38 00	--------------------------------	Cottonseed meal, -----	3730
7.32	--------	7.32	--------	39 00			
7.45	8.00	10.42	10.50	1 80	--------------------------------	Cottonseed meal and excessive amount of cottonseed hulls.	4732
7.95	8.00	9.08	10.50	37 00	--------------------------------	Cottonseed meal, -----	4173
7.73	8.00	9.30	10.50	1 85	--------------------------------	Cottonsed meal, -----	4176
8.80	7-9	8.00	10.50	35 00	--------------------------------	Cottonseed meal, -----	5119
7.98	--------	9.18	--------	36 25			
10.35	7-9	7.45	--------	1 80	--------------------------------	Cottonseed meal, -----	3767
8.43	9.00	8.96	7.90	36 50	Decorticated cottonseed,--	As certified, ----------	4118
7.73	9.00	9.38	7.00	36 00	Decorticated cottonseed,--	As certified, ----------	3874
7.62	9.00	8.20	7.00	33 00	Decorticated cottonseed,--	As certified, ----------	4367
8.35	9.00	9.49	7.00	1 80	Decorticated cottonseed,--	Cottonseed meal and excessive amount of cottonseed hulls.	4978
9.06	9.00	9.23	7.00	1 65	Decorticated cottonseed,--	As certified, ----------	4201
6.15	9.00	7.07	7.00	37 00	Decorticated cottonseed,--	As certified, ----------	4531
9.00	9.00	10.98	7.00	35 00	Decorticated cottonseed,--	As certified, ----------	4219
8.10	9.00	8.80	7.00	1 90	Decorticated cottonseed,--	As certified, ----------	3750
6.40	9.00	10.47	7.00	36 09	Decorticated cottonseed,--	Cottonseed meal and excessive amount of cottonseed hulls.	4855
6.85	9.00	12.74	7.00	2 15	Decorticated cottonseed,--	Cottonseed meal and excessive amount of cottonseed hulls.	4897

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
4485	Star Brand, J. Lindsay Wells Co., Memphis, Tenn.	Reading, Aug. C. Wertz & Bro.	785	8.08	39.07	41.00
		Average,		7.72	38.45	--------
		Total average,		7.62	40.11	--------
	Linseed Meal—New Process.					
5112	Cleveland Flaxmeal, American Linseed Co., Chicago, Ill.	Doylestown, H. S. Beidler,	1412	7.62	35.00	36-40
5084	Cleveland Flaxmeal, American Linseed Co., Chicago, Ill.	Pottstown, S. B. Wagner & Co.	1384	7.77	37.19	36-40
		Average,		7.69	36.10	--------
	Linseed Meal—Old Process.					
5128	------ American Linseed Co., New York, N. Y.	Somerset, H. C. Beerits' Sons.	1428	8.23	36.00	32-36
4913	------ American Linseed Co., New York, N. Y.	Nanticoke, Bergin & Co.,	1213	9.08	35.31	32-36
4751	------ American Linseed Co., New York, N. Y.	Sunbury, Blank & Gottshall	1051	8.15	36.94	32-36
3867	------ American Linseed Co., New York, N. Y.	Knoxville, J. H. Burch,	167	9.10	37.06	32-36
3989	------ American Linseed Co., New York, N. Y.	Bradford, C. L. Douglass,	239	10.42	33.81	32-36
4114	------ American Linseed Co., New York, N. Y.	Lancaster, John W. Eshelman.	414	9.33	36.13	32-36
3731	------ American Linseed Co., New York, N. Y.	Patton, F. E. Farabaugh,	31	9.27	36.19	32-36
5179	------ American Linseed Co., New York, N. Y.	Carnegie, C. A. Foster,	1479	8.82	38.00	32-36
3883	------ American Linseed Co., New York, N. Y.	Coudersport, Gates Bros.,	183	9.28	36.38	32-36
4827	------ American Linseed Co., New York, N. Y.	Danville, Haney-Frazier Milling Co.	1127	8.61	37.19	32-36
4267	------ American Linseed Co., New York, N. Y.	West Chester, E. D. Hemphill.	567	9.23	37.63	32-36
4142	------ American Linseed Co., New York, N. Y.	Leaman Place, Harry K. Hershey.	442	8.70	37.50	32-36
4398	------ American Linseed Co., New York, N. Y.	Newville, H. Manning & Son.	698	9.16	35.81	32-36
4047	------ American Linseed Co., New York, N. Y.	Charleroi, R. C. Mountser,	347	9.63	35.63	32-36
4428	------ American Linseed Co., New York, N. Y.	Harrisburg, Paxton Flour and Feed Co.	728	9.08	36.69	32-36
4714	------ American Linseed Co., New York, N. Y.	Phillipsburg, Philipsburg Milling, Lighting and Heating Co.	1014	8.50	36.31	--------
4745	Wright & Hills Brand, American Linseed Co., New York, N. Y.	Clearfield, Ross & Woods,	1045	8.89	36.69	32-34
4458	------ American Linseed Co., New York, N. Y.	Harrisburg, J. H. Sheesley,	753	8.68	36.38	32-36
4529	------ American Linseed Co., New York, N. Y.	Allentown, Geo. B. Shelly Est.	829	8.07	36.75	32-36
3786	------ American Linseed Co., New York, N. Y.	Susquehanna, Homer E. Spencer.	86	9.80	34.81	32-36
4731	------ American Linseed Co., New York, N. Y.	Du Bois, A. T. Sprankle,	1031	8.43	36.19	32-36
3923	------ American Linseed Co., New York, N. Y.	Kane, Swanson Grocery Co.,	223	10.56	35.81	32-36
3751	------ American Linseed Co., New York, N. Y.	Johnstown, Swope Bros.,	51	9.24	37.38	32-36

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
6.77	9.00	10.39	7.00	$36 00	Decorticated cottonseed,--	Cottonseed meal and excessive amount of cottonseed hulls.	4455
7.63	....	9.61	....	36 32			
8.18	....	8.73	....	37 01			
2.65	1-3	9.53	6-7.50	38 00		New process oil meal,-	5112
2.40	1-3	8.45	6-7.50	39 00		New process oil meal,-	5034
2.53	....	8.99	....	38 50			
6.78	5-7	8.85	5.50-7	2 25		Linseed oil meal, -----	5123
6.63	5-7	7.97	5.50-7	2 00		Linseed oil meal, -----	4913
7.00	5-7	7.47	5.50-7	1 95		Linseed oil meal, -----	4751
5.98	5-7	7.35	5.50-7	2 00		Linseed oil meal, -----	3857
5.65	5-7	7.37	9.11	2 05		Linseed oil meal, -----	3939
5.60	5-7	7.61	5.50-7	37 50		Linseed oil meal, -----	4114
6.23	5-7	7.50	5.50-7	2 20		Linseed oil meal, -----	3731
6.30	5-7	7.51	5.50-7	38 00		Linseed oil meal, -----	5179
5.78	5-7	7.56	5.50-7	2 00		Linseed oil meal, -----	3883
5.40	5-7	7.55	5.50-7	2 00		Linseed oil meal, -----	4227
5.45	5-7	7.15	5.50-7	40 00		Linseed oil meal, -----	4267
6.18	5-7	7.72	5.50-7	38 00		Linseed oil meal, -----	4142
5.70	5-7	8.10	9-11	1 75		Linseed oil meal, -----	4398
5.85	5-7	7.67	5.50-7	38 00		Linseed oil meal, -----	4047
6.13	5-7	7.87	9-11	36 00		Linseed oil meal, -----	4423
5.90	....	8.35	....			Linseed oil meal, -----	4714
6.30	6.00	7.17	5.50-7	2 25		Linseed oil meal, -----	4745
6.40	5-7	7.97	9-11	1 90		Linseed oil meal, -----	4453
6.20	5-7	7.47	9-11	38 00		Linseed oil meal, -----	4520
6.20	5-7	7.66	5.50-7	2 00		Linseed oil meal, -----	3783
6.23	5-7	7.57	5.50-7	2 00		Linseed oil meal, -----	4731
5.98	5-7	7.11	5.50-7	2 00		Linseed oil meal, -----	3923
6.40	5-7	6.87	5.50-7	2 00		Linseed oil meal, -----	3751

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
5085	...... American Linseed Co., New York, N. Y.	Pottstown, S. B. Wagner & Co.	1385	8.15	37.19	32-36
4156	...... American Linseed Co., New York, N. Y.	Kinzer, E. E. & W. J. L. Walker.	456	9.57	37.31	32-36
4188	...... American Linseed Co., New York, N. Y.	Witmer, Joseph B. Weaver & Son.	488	9.44	35.81	32-36
		Average, ...	....	9.05	36.42	....
5161	...... E. I. Bailey, Cleveland, Ohio.	Canonsburg, Canonsburg Milling Co.	461	8.62	30.75	32.00
4952	...... E. J. Bailey, Cleveland, Ohio.	Butler, H. J. Klingler & Co.	1252	8.90	32.63	32.00
		Average, ...	....	8.76	31.69	....
4352	...... The Guy G. Major Co., Toledo, Ohio.	Renovo, M. Dwyer, ...	652	9.70	30.81	30-36
4848	...... The Guy G. Major Co., Toledo, Ohio.	Catawissa, M. J. Grimes & Bro.	1148	9.25	31.00	30-36
4979	...... The Guy G. Major Co., Toledo, Ohio.	Harmony, Harmony Cereal Co.	1279	9.95	30.63	30-36
5050	...... The Guy G. Major Co., Toledo, Ohio.	Corry, F. L. Heath, ...	1350	8.91	32.00	30-36
4993	...... The Guy G. Major Co., Toledo, Ohio.	Greenville, Hecker & Reed,	1293	9.11	31.94	30-36
4925	...... The Guy G. Major Co., Toledo, Ohio.	Scranton, Miner-Hillard Milling Co.	1225	8.41	30.63	30-36
4986	...... The Guy G. Major Co., Toledo, Ohio.	Mercer, I. J. Pizor & Son,	1286	9.43	32.63	30-36
4717	...... The Guy G. Major Co., Toledo, Ohio.	Munson Station, Jacob Smutzinger.	1017	9.38	30.94	30-36
		Average, ...	....	9.26	31.32	....
5065	...... The Mann Bros. Co., Buffalo, N. Y.	Erie, A. P. Allen, ...	1365	9.08	35.69	34-37
5011	...... The Mann Bros. Co., Buffalo, N. Y.	Oil City, Clyde D. Duffee,--	1311	10.08	35.63	34-37
4101	...... The Mann Bros. Co., Buffalo, N. Y.	Beaver, A. F. Grine, ...	401	9.93	36.56	34-37
3889	...... The Mann Bros. Co., Buffalo, N. Y.	Port Allegany, Port Allegany Milling Co.	189	9.33	34.94	34-37
4280	...... The Mann Bros. Co., Buffalo, N. Y.	Lewistown, Spanogle-Yeager Milling Co.	580	8.73	36.63	34-37
3917	...... The Mann Bros. Co., Buffalo, N. Y.	Kane, J. A. Stoll, ...	217	9.19	36.00	34-37
4387	...... The Mann Bros. Co., Buffalo, N. Y.	Shippensburg, John P. Wadel.	687	9.64	35.19	34-37
4341	...... The Mann Bros. Co., Buffalo, N. Y.	Lock Haven, E. E. Wentz,-	641	9.58	35.75	34-37
		Average, ...	....	9.48	35.80	....
5125	...... The Metzger Seed and Oil Co., Toledo, Ohio.	Somerset, John G. Emert,	1425	8.35	33.75	30-36
5012	...... The Metzger Seed and Oil Co., Toledo, Ohio.	Oil City Enterprise Milling Co.	1312	9.85	33.13	30-36
4094	...... The Metzger Seed and Oil Co., Toledo, Ohio.	New Brighton, J. H. Hornby & Sons.	394	9.54	34.94	30-36
5034	...... The Metzger Seed and Oil Co., Toledo, Ohio.	Franklin, Johnson & Co.,--	1334	8.68	33.81	30-36
		Average	....	9.09	33.91	....

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
5.55	5–7	7.72	5.50–7	$1 90	....	Linseed oil meal, ...	5085
6.15	5–7	7.31	5.50–7	1 95	....	Linseed oil meal, ...	4156
5.75	5–7	8.06	9–11	38 00	....	Linseed oil meal, ...	4188
6.07	....	7.68	....	39 50			
7.11	8.00	8.37	8.00	38 00	....	Linseed oil meal, ...	5161
6.94	8.00	8.85	8.00	1 95	....	Linseed oil meal, ...	4952
7.03	....	8.61	....	38 50			
7.18	5–7	9.00	2–10	2 25	....	Linseed oil meal, ...	4352
6.80	5–7	9.15	2–10	2 00	....	Linseed oil meal, ...	4848
6.40	5–7	9.45	2–10	1 80	....	Linseed oil meal and small amount of chaff.	4979
7.00	5–7	9.32	2–10	2 25	....	Linseed oil meal and trace of chaff.	5050
7.40	5–7	8.65	2–10	2 20	....	Linseed oil meal, ...	4993
6.90	5–7	9.52	2–10	1 90	....	Linseed oil meal and small amount of chaff.	4925
6.85	5.7	9.27	2–10	2 00	....	Linseed oil meal and small amount of chaff.	4986
7.43	5–7	9.67	2–10	2 00	....	Linseed oil meal and small amount of chaff.	4717
7.00	....	9.25	....	41 00			
7.75	6–7	7.97	5–10	38 00	....	Linseed oil meal, ...	5065
7.23	6–7	7.95	5–10	2 00	....	Linseed oil meal, ...	5011
7.18	6–7	7.86	5–10	2 10	....	Linseed oil meal, ...	4101
9.85	6.7	7.83	5–10	2.25	....	Linseed oil meal, ...	3889
7.93	6–7	7.25	5–10	2 00	....	Linseed oil meal, ...	4280
7.58	6–7	7.47	5–10	1 95	....	Linseed oil meal, ...	3917
8.25	6–7	7.80	5–10	2 25	....	Linseed oil meal, ...	4387
8.98	6–7	6.65	5–10	2 25	....	Linseed oil meal, ...	4341
8.09	....	7.54	....	41 75			
6.18	5–7	8.15	2–10	40 00	....	Linseed oil meal, ...	5125
6.78	5–7	9.02	2–10	2 25	....	Linseed oil meal, ...	5012
7.30	5–7	7.74	2–10	2 10	....	Linseed oil meal, ...	4094
6.78	5–7	8.47	2–10	42 00	....	Linseed oil meal, ...	5084
6.74	....	8.34	....	42 25			

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein. Found.	Crude Protein. Guaranteed.
				Per ct.	Per ct.	Per ct.
5115	...... Midland Linseed Co., Chicago, Ill.	Doylestown, H. S. Beidler,..	1415	8.26	35.94	32.00
5656	...... Midland Linseed Co., Chicago, Ill.	Union City, Union Coal and Supply Co.	1356	8.78	35.31	32.00
		Average, ...	....	8.52	35.63	....
3077	...... National Lead and Oil Co. of Penna., Pittsburg, Pa.	Greensburg, McFarland Supply Co.	277	8.34	35.31	32.00
3914	...... Northern Linseed Oil Co., Minneapolis, Minn.	St. Marys, Hall, Kaul & Hyde Co.	214	8.80	34.75	32.38
4073	...... Red Wing Linseed Co., Red Wing, Minn.	Kittanning, D. H. Boarts,..	373	7.51	34.25	30.00
4079	...... Red Wing Linseed Co., Red Wing, Minn.	Kittanning, J. A. Gault & Co.	379	6.47	34.75	30.00
		Average, ...	....	6.99	34.50	....
3726	...... The Sherwin Williams Co., Cleveland, Ohio.	Indiana, J. L. Orr, ...	26	8.85	36.75	33.00
4107	...... Thompson & Co., Allegheny, Pa.	Cresson, H. J. Eberly, ...	407	9.59	36.69	32-37.50
1598	...... Thompson & Co., Allegheny, Pa.	Bedford, Farmers' Exchange.	898	9.36	32.00	32-37.50
3716	...... Thompson & Co., Allegheny, Pa.	Homer City, A. George & Son.	16	11.11	33.50	32-37.50
5134	...... Thompson & Co., Allegheny, Pa.	Washington, D. P. Hart,..	1434	8.72	34.50	32-37.50
4024	...... Thompson & Co., Allegheny, Pa.	Uniontown, King Bros., ..	324	8.68	36.75	32-37.50
4070	...... Thompson & Co., Allegheny, Pa.	Leechburg, Leechburg Flouring Mill.	370	9.38	36.50	32-37.50
3968	...... Thompson & Co., Allegheny, Pa.	Greensburg, Harry Orr & Co.	268	9.38	33.19	32-37.50
		Average, ...	....	9.46	34.73	....
		Total average, ...	....	9.06	35.05	....
	Linseed Meal with Admixtures.					
5165	Old Process Laxo Cake, Laxo Cake Meal Co., Chicago, Ill.	Canonsburg, Dunlap Bros.,	1465	7.90	27.19	25-28
4076	Old Process Laxo Cake, Laxo Cake Meal Co., Chicago, Ill.	Kittanning, William Gates Est.	376	7.88	26.56	25-28
3997	Old Process Laxo Cake, Laxo Cake Meal Co., Chicago, Ill.	Jeannette, N. C. Maines,...	297	8.55	26.38	25-28
4092	Old Process Laxo Cake, Laxo Cake Meal Co., Chicago, Ill.	New Kensington, Skillen & Galley.	392	8.25	26.88	25-28
		Average, ...	....	8.14	26.75	....
	Corn Oil Meal.					
5024	Globe, Corn Products Refining Co., New York, N. Y.	Tionesta, Lanson Bros.,...	1324	10.29	21.50	19.00

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
6.33	6.00	7.10	10.00	$39 00	....	Linseed oil meal, ...	5115
6.05	6.00	7.52	8.50–9.50	2 00	....	Linseed oil meal, ...	5056
6.19	....	7.31	....	39 50			
7.33	5.20	7.69	8.90	2 25	....	Linseed oil meal, ...	3977
6.90	6–8	7.87	9–11	2 50	....	Linseed oil meal, ...	3914
8.03	6.00	7.85	9.00	2 10	....	Linseed oil meal, ...	4073
8.20	6.00	7.87	9 00	2 15	....	Linseed oil meal, ...	4079
8.12	....	7.86	....	42 50			
6.70	6.00	7.27	8.00	40 00	....	Linseed oil meal, ...	3726
5.93	5.50–8.50	7.60	6–11	2 25	....	Linseed oil meal, ...	4107
6.90	5.50–8.50	8.85	6–11	2 10	....	Linseed oil meal, ...	4598
7.10	5.50–8.50	7.97	6–11	2 15	....	Linseed oil meal, ...	3716
6.15	5.50–8.50	8.00	6–11	2 25	....	Linseed oil meal, ...	5134
5.65	5.50 8.50	7.79	6–11	2 20	....	Linseed oil meal, ...	4024
5.83	5.50–8.50	7.20	6–11	2 00	....	Linseed oil meal, ...	4071
7.38	5.50–8.50	8.62	6–11	2 25	....	Linseed oil meal, ...	3968
6.42	....	8.00	....	43.43			
6.67	....	7.94	....	40 30			
8.60	8–10	9.25	7–11	38 00	Made from unscreened flaxseed from which the ordinary field weed seeds, such as little buckwheat, foxtail, mustard, pig weed, rape, bindweed, etc., have not been separated, and is cooked and sterilized.	As certified, ...	5167
9.50	8–10	9.66	5–9	2 10	....	Linseed meal and a large proportion of weed seed residue.	4076
8.78	8–10	9.06	5–9	2 10	....	Linsed meal and a large proportion of weed seed residue.	3997
9.55	8–10	9.96	5–9	2 00	....	Linseed meal and a large proportion of weed seed residue.	4092
9.11	....	9.48	....	40 50			
18.45	7.50	7.72	15.00	1 70	Made from corn, ...	As certified, ...	5024

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
	DISTILLERY AND BREWERY BY-PRODUCTS.					
	Distillers' Grains.			Per ct.	Per ct.	Per ct.
3844	Ajax Flakes, Ajax Milling and Feed Co., New York, N. Y.	Wellsboro, Geo. C. & F. A. Brooks.	144	4.46	30.06	31-33
4117	Ajax Flaxes, Ajax Milling and Feed Co., New York, N. Y.	Lancaster, John W. Eshelman.	417	6.31	31.56	31-33
4210	Ajax Flaxes, Ajax Milling and Feed Co., New York, N. Y.	York, Jacob Eyster, ...	510	4.63	29.00	30-33
4422	Ajax Flakes, Ajax Milling and Feed Co., New York, N. Y.	Mechanicsburg, A. B. Harnish.	722	7.49	27.56	30-33
4246	Ajax Flakes, Ajax Milling and Feed Co., New York, N. Y.	Parkesburg, E. H. Keen & Co.	546	5.35	31 81	31-33
5146	Ajax Flakes, Ajax Milling and Feed Co., New York, N. Y.	Washington, G. W. McBrier.	1446	5.16	32.38	31-33
4202	Ajax Flakes, Ajax Milling and Feed Co., New York, N. Y.	York, Miller Bros., ...	502	5.91	30.13	31-33
4192	Ajax Flakes, Ajax Milling and Feed Co., New York, N. Y.	York, F. Z. Stauffer, ...	492	5.12	30.56	30-33
		Average, ...		5.55	30.38	....
5079	Atlantic, Atlantic Export Co. of Wisconsin, Chicago, Ill.	Pottstown, A. K. Culp, ...	1379	6.19	30.69	30.00
4245	...... M. F. Baringer, Philadelphia, Pa.	Parkesburg, E. H. Keen & Co.	545	7.04	27.56	28-31
4203	...... M. F. Baringer, Philadelphia, Pa.	York, Mitzel & Sloat, ...	503	6.46	26.47	28-31
		Average, ...		6.75	27.02	....
5062	Fourex, The J. W. Biles Co., Cincinnati, Ohio.	Erie, A. P. Allen, ...	1362	5.85	33.00	31.00
4484	Fourex, The J. W. Biles Co., Cincinnati, Ohio.	Reading, Aug. C. Wertz & Bro.	784	6.77	29.56	31.00
		Average, ...		6.31	31.28	....
4903	Continental, Continental Cereal Co., Peoria, Ill.	Hazleton, John G. Seager's Sons.	1203	4.27	31.88	33.00
4960	Continental, Continental, Cereal Co., Peoria, Ill.	Butler, B. F. Shannon & Co.	1260	6.33	26.44	31.00
		Average, ...		5.30	29.16	....
5047	Hector, The Hottelet Co., Milwaukee, Wis.	Corry, W. A. Dodd, ...	1347	5.34	27.44	30-33
5095	Proteino, C. F. Keck & Co., Milwaukee, Wis.	Pottstown, W. H. Moser,..	1395	5.58	28.40	28-30
5080	Proteino, C. F. Keck & Co., Milwaukee, Wis.	Pottstown, S. B. Wagner & Co.	1380	5.28	27.50	28-30
		Average, ...		5.43	27.95	....
		Total average, ...		5.75	29.50	....

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
13.14	12.00	10.97	12–14	$35 00	....	Distillers' grains (largely from corn.)	3844
13.28	12–14	12.22	12–14	33 50	....	Distillers' grains (largely from corn.)	4117
13.58	11–14	13.00	12–14	1 85	....	Distillers' grains (largely from corn.)	4210
13.08	11–14	10.10	12–14	33 75	....	Distillers' grains (largely from corn.)	4422
14.20	12–14	11.85	12–14	33 00	....	Distillers' grains (largely from corn.)	4246
13.50	12–14	12.15	12–14	33 00	....	Distillers' grains (largely from corn.)	5143
14.00	12–14	12.90	12–14	1 95	....	Distillers' grains (largely from corn.)	4202
13.20	11–14	13.08	12–14	36 00	....	Distillers' grains (largely from corn.)	4192
13.49	....	12.03	....	35 03			
9.65	8.00	10.70	12.00	1 55	....	Distillers' grains (largely from corn.)	5079
11.10	9–12	10.20	14.00	33 00	....	Distillers' grains (largely from corn.)	4245
11.00	9–12	11.90	14.00	32 50	....	Distillers' grains (largely from corn.)	4203
11.50	....	11.05	....	32 75			
14.93	12.00	12.00	13.00	32 00	....	Distillers' grains (largely from corn.)	5062
9.75	12.00	11.00	13.00	34 00	....	Distillers' grains (largely from corn.)	4484
12.34	....	11.50	....	33 00			
13.80	14.00	9.62	....	1 70	....	Distillers grains from corn containing small amount of barley and oat residues.	4903
14.63	13.50	8.62	8.50	34 00	Pure distillers' grains from corn.	Distillers' grains from corn containing small amount of barley and oat residues.	4960
14.22	....	9.12	....	34 00			
11.43	10–12	10.70	14.00	32 00	....	Distillers' grains (largely from corn).	5047
11.50	10–12	11.47	14.00	1 60	Corn distillers' grains, ...	Corn distillers' grains and small amount of barley and oat residues.	5095
11.00	10–12	12.05	14.00	33 00	Corn distillers' grains, ...	Corn distillers' grains and small amount of barley and oat residues.	5080
11.25	....	11.76	....	32 50			
12.64	....	11.36	....	33 76			

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
4108	...... Cresson Springs Brewing Co., Cresson, Pa.	Cresson, Cresson Springs Brewing Co.	408	8.57	28.75	....
3768	...... The Hottelet Co., Milwaukee, Wis.	Alford, F. E. Moore, ...	68	4.63	24.44	26.00
4037	...... Vandergrift Distilling Co., Vandergrift Landing, Pa.	Monongahela, D. E. Gamble.	337	4.69	13.60	....
		Average, ...	....	5.96	22.26	....
	Brewers' Grains.					
3836	...... Atlantic Export Co. of Wisconsin, Chicago, Ill.	Richland Center, Allen K. Smith.	136	6.30	22.06	27.00
3841	...... M. F. Baringer, Philadelphia, Pa.	Wellsboro, Geo. C. & F. A. Brooks.	141	5.60	25.88	25.00
3749	...... Conemaugh Brewing Co., Conemaugh, Pa.	Johnstown, Swope Bros.,--	49	8.69	26.88	21.00
4271	Holstein, Hottelet & Co., Milwaukee, Wis.	Kennett Square, C. G. Gawthrop Co., Ltd.	571	7.56	25.44	27.00
4240	Holstein, Hottelet & Co., Milwaukee, Wis.	Coatesville, P. D. Handwork Co.	540	5.11	23.75	27.00
		Average, ...	....	6.33	24.60	....
4332	...... Johnstown Dry Grains Co., Johnstown, Pa.	Montoursville, J. M. Hayes & Co.	632	6.42	25.63	11.00
4263	...... Johnstown Dry Grains Co., Johnstown, Pa.	West Chester, E. D. Hemphill.	563	6.25	24.50	24.00
		Average, ...	....	6.33	25.07	....
5111	...... J. C. Klauder Estate, Philadelphia, Pa.	Doylestown, H. S. Beidler,-	1411	5.76	27.38	23.24
4605	...... Pittsburg Brewing Co., Pittsburg, Pa.	Wilkinsburg, Johnstown & Smith.	905	6.14	23.94	25.00
4609	...... Pittsburg Brewing Co., Pittsburg, Pa.	Wilkinsburg, Jordan & Steenson.	909	7.83	23.19	25.00
		Average.	....	6.98	23.57	....
3787	...... M. G. Rankin & Co., Milwaukee, Wis.	Susquehanna, Homer F. Spencer.	87	5.47	26.88	23.26
4154	...... Rudolph Stecher Brewing Co., St. Louis, Mo.	Manheim, B. R. Hollinger,-	454	6.74	22.63	24.00
4897	...... Stegmaier Brewing Co., Wilkes-Barre, Pa.	Wilkes-Barre, Kirkendall Son Co.	1197	4.07	29.06	23.70
4888	...... Stegmaier Brewing Co., Wilkes-Barre, Pa.	Wilkes-Barre, Robbins Milling Co.	1188	7.02	27.56	23.70
4900	...... Stegmaier Brewing Co., Wilkes-Barre, Pa.	Wilkes-Barre, Wilkes-Barre Milling Co.	1200	6.56	28.13	23.70
		Average, ...	....	5.88	28.25	....
		Total average, ...	....	6.36	25.53	....
	Malt Sprouts.					
4507	...... M. F. Baringer, Philadelphia, Pa.	Reading, W. T. Snyder,....	807	8.81	25.94	22.00
5071	...... Geo. Bullen & Co., Chicago, Ill.	Erie, W. J. Carroll, ...	1371	6.31	25.50	20-25

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
8.05		13.01		$25 00		Distillers' grains from rye.	4108
9.20	7.00	12.56		1 50		Distillers' grains, largely from corn, containing rye distillers' grains, brewers' grains, malt sprouts and small amount of buckwheat.	3768
8.25		17.75		1 40		Distillers' grains from rye.	4037
8.50		14.43		27 67			
7.68	7.00	16.14	13.00	1 45	Pure dried brewers' grains.	As certified,	3836
7.80	6.00	13.13	15.00	30 00		Dried brewers' grains,	3841
6.40	6.71	12.96	12.84	1 25		Dried brewers' grains,	3749
7.80	6.00	13.40	14.50	29 00		Dried brewers' grains,	4271
6.11	6.00	10.80	14.50	1 55		Dried brewers' grains,	4240
6.96		12 10		30 00			
8.38	6.71	14.72	24.00	28 00	Dried brewers' grains,	As certified,	4832
7.43	6.71	15.48	11.00	26 00		Dried brewers' grains,	4263
7.91		15.10		27 00			
7.23	6.64	13.37	15.00	26 00		Dried brewers' grains,	5111
7.68	7.50	16.02	14.00	1 50		Dried brewers' grains,	4605
7.73	7.50	14.45	14.00	1 50		Dried brewers' grains,	4609
7.71		15.23		30 00			
7.50	6.00	14.05	16.00	30 00		Dried brewers' grains,	3787
6.38	7.00	14.45	15.00	28 00		Dried brewers' grains,	4154
7.68	6.30	13.30	16.25	1 20		Dried brewers' grains,	4897
7.00	6.30	13.10	16.25	24 00		Dried brewers' grains,	4888
7.35	6.30	12.92	16.25	1 15		Dried brewers' grains,	4900
7.34		13.10		23 67			
7.34		13.88		27 53			
2.53	5.00	11.30	15.00	1 35		Malt sprouts,	4507
1.55	2.00	12.00	13-16	22 00		Malt sprouts and considerable proportion of barley.	5071

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein. Found.	Crude Protein. Guaranteed.
				Per ct.	Per ct.	Per ct.
4487	...... Francis Duhne, Jr., Milwaukee, Wis.	Reading, Aug. C. Wertz & Bro.	787	7.80	28.38	25.00
5072	Marvel Flint Mill Co., Milwaukee, Wis.	Erie, W. J. Carroll, ...	1372	7.87	26.88	22-26
5069	...... John Kam Malting Co., Buffalo, N. Y.	Erie, W. J. Carroll, ...	1369	7.10	25.31	25.00
3904	...... Geo. J. Meyer Malting Co., Buffalo, N. Y.	Ridgway, C. O. Salberg, ---	204	9.72	25.56	20.82
3766	...... M. G. Rankin Co., Milwaukee, Wis.	Montrose, Brown & Fassett.	66	7.23	26.50	23.00
5063	North Star Choice, E. S. Woodworth & Co., Minneapolis, Minn.	Erie, A. P. Allen, ...	1363	7.84	23.88	20-25
		Average, ...		7.83	25.99	....
	MAIZE BY-PRODUCTS.					
	Gluten Feed.					
5116	Royal, American Maize Products Co., New York, N. Y.	Doylestown, H. S. Beidler,-	1416	4.88	21.13	23-25
3875	Cream of Corn, American Maize Products Co., New York, N. Y.	Coudersport, Eulalia Milling Co.	175	8.15	24.63	23.25
4502	Cream of Corn, American Maize Products Co., New York, N. Y.	Reading, Reading Grain Co.	802	8.45	26.06	23-25
4471	Royal, American Maize Products Co., New York, N. Y.	Myerstown, S. T. Yost,----	771	8.10	22.00	23-25
		Average, ...		7.39	23.46	....
4217	...... American Starch Co., Lititz, Pa.	York, F. Loucks & Son,---	517	7.52	20.31	21-23
4189	...... American Starch Co., Lititz, Pa.	Bird-in-hand, J. A. Umble & Bro.	489	5.17	18.81	21-23
		Average, ...		6.34	19.56	....
5091	Clinton, Clinton Sugar Refining Co., Clinton, Iowa.	Pottstown, W. H. Moser,--	1391	7.09	21.69	20-25
4526	Clinton, Clinton Sugar Refining Co., Clinton, Iowa.	Fleetwood, Schaeffer, Wanner & Co.	826	8.70	20.69	20-25
5081	Clinton, Clinton Sugar Refining Co., Clinton, Iowa.	Pottstown, S. B. Wagner & Co.	1381	8.72	21.69	20-25
4157	Clinton, Clinton Sugar Refining Co., Clinton, Iowa.	Kinzer, E. E. & W. J. L. Walker.	457	10.10	22.06	20-25
		Average, ...		8.65	21.53	....
4442	Buffalo, Corn Products Ref. Co., New York, N. Y.	Middletown, S. J. Baer, ---	742	9.03	25.06	24-27
4755	Buffalo, Corn Products Ref. Co., New York, N. Y.	Sunbury Blank & Gottshall.	1055	7.51	25.75	21-27
4472	Buffalo, Corn Products Ref. Co., New York, N. Y.	Myerstown, E. L. Bleistein,	772	8.42	23.13	23-25
3778	Buffalo, Corn Products Ref. Co., New York, N. Y.	Great Bend, Albert Bolt,--	78	10.18	24.60	21-27

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.					
Found.	Guaranteed.	Found.	Guaranteed.	Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Per ct.	Per ct.	Per ct.	Per ct.				
2.05	2.00	12.30	11.00	$25 00	....	Malt sprouts, ...	4487
1.88	2.00	12.12	13.00	24 00	....	Malt sprouts and small amount of barley and weed seeds.	5072
1.53	.75-1.50	14.32	16.00	24 00	....	Malt sprouts, ...	5069
2.33	1.15	13.00	22.00	1 53	....	Malt sprouts, ...	3904
2.13	1.50	12.47	17.00	1 40	....	Malt sprouts, ...	3766
2.00	1-3	14.17	5-30	24 00	....	Malt sprouts and considerable proportion of barley and small amount of weed seeds.	5068
2.00	....	12.71	....	25 50			
3.83	2.50	6.57	8.50	27 00	....	Gluten feed, ...	5116
2.93	2.50	7.27	8.50	32 00	Artifically colored, ...	Gluten feed, colored,--	3875
2.63	2.50	6.62	8.50	1 50	....	Gluten feed, ...	4502
4.30	2.50	6.45	8.50	1 50	....	Gluten feed, ...	4471
3.42	....	6.72	....	29 75			
6.90	5.00	6.48	6.00	1 70	....	Gluten feed, ...	4217
6.78	5.00	6.82	6.00	31 00	....	Gluten feed, ...	4189
6.84	....	6.65	....	32 50			
5.43	3.00	7.27	7.50	1 50	....	Gluten feed, ...	5091
6.33	3.00	6.10	8.00	29 00	....	Gluten feed, ...	4526
4.70	3.00	7.15	8.00	27 00	....	Gluten feed, ...	5081
3.70	3.00	6.53	7.50	1 75	....	Gluten feed, ...	4157
5.04	....	6.76	....	30 25			
3.85	2.50	7.52	8.50	30 00	Artificially colored with No. 85 Orange I and No. 4 Napthol Yellow S.	Gluten feed, colored,--	4442
2.45	2.50	6.10	8.50	1 50	Artificially colored with No. 85 Orange I and No. 4 Naphtol Yellow S.	Gluten feed, colored,--	4755
5.40	2.50	5 92	8.50	29 00	Artificially colored with No. 85 Orange I and No. 4 Naphtol Yellow S.	Gluten feed, colored,--	4472
3.70	2.50	6.44	8.50	32 00	Artificially colored with No. 85 Orange I and No. 4 Naphtol Yellow S.	Gluten feed, colored,--	3778

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
3840	Buffalo, Corn Products Ref. Co., New York, N. Y.	Wellsboro, Geo. C. & F. A. Brooks.	140	8.01	28.06	24–27
5159	Buffalo, Corn Products Ref. Co., New York, N. Y.	Canonsburg, Canonsburg Milling Co.	1459	9.25	25.56	24–27
5060	Buffalo, Corn Products Ref. Co., New York, N. Y.	Union City, Daniel Clark & Co.	1360	8.41	26.88	24–27
3827	Buffalo, Corn Products Ref. Co., New York, N. Y.	Alba, S. S. Cosper, -------	127	10.30	23.81	24–27
3795	Buffalo, Corn Products Ref. Co., New York, N. Y.	Ulster, Crescent Roller Mill,	95	10.83	23.06	24–27
3791	Buffalo, Corn Products Ref. Co., New York, N. Y.	Towanda, Dayton Milling Co.	91	8.98	27.69	23–25
5048	Buffalo, Corn Products Ref. Co., New York, N. Y.	Corry, W. A. Dodd, ------	1348	7.69	22.81	24–27
3948	Buffalo, Corn Products Ref. Co., New York, N. Y.	Warren, T. N. Dunham, ---	248	11.38	22.19	24–27
5167	Buffalo, Corn Products Ref. Co., New York, N. Y.	Canonsburg, Dunlap Bros.,	1467	8.75	27.31	23–25
4123	Buffalo, Corn Products Ref. Co., New York, N. Y.	Lancaster, John W. Eshelman.	423	9.23	25.56	24–27
5178	Buffalo, Corn Products Ref. Co., New York, N. Y.	Carnegie, C. A. Foster, ---	1478	8.47	25.50	24–27
3719	Buffalo, Corn Products Ref. Co., New York, N. Y.	Homer City, A. George & Son.	19	12.42	24.63	24–27
4826	Crescent, Corn Products Ref. Co., New York, N. Y.	Danville, Haney-Frazier Milling Co.	1126	8.91	24.63	23–25
3760	Buffalo, Corn Products Ref. Co., New York, N. Y.	Montrose, J. C. Harrington.	60	10.24	24.13	24–27
4994	Buffalo, Corn Products Ref. Co., New York, N. Y.	Greenville, Hecker & Reed, -	1294	8.04	22.69	24–27
4953	Buffalo, Corn Products Ref. Co., New York, N. Y.	Butler, H. J. Klingler & Co.	1253	8.73	23.31	24–27
3781	Buffalo, Corn Products Ref. Co., New York, N. Y.	Susquehanna, A. L. Langford.	81	9.82	23.88	24–27
4939	Buffalo, Corn Products Ref. Co., New York, N. Y.	Scranton, C. P. Matthews & Sons, Inc.	1239	7.84	26.19	24–27
4147	Buffalo, Corn Products Ref. Co., New York, N. Y.	Manheim, F. K. Nauman, --	447	7.62	21.81	--------
4520	Buffalo, Corn Products Ref. Co., New York, N. Y.	Mt. Penn, Nein Bros., -----	820	9.82	24.19	24–27
3725	Buffalo, Corn Products Ref. Co., New York, N. Y.	Indiana, J. L. Orr, --------	25	9.64	27.63	23–25
4429	Buffalo, Corn Products Ref. Co., New York, N. Y.	Harrisburg, Paxton Flour and Feed Co.	729	10.32	24.69	24–27
3938	Buffalo, Corn Products Ref. Co., New York, N. Y.	Bradford, Smith Bros., ----	238	10.30	24.06	25.00
4100	Buffalo, Corn Products Ref. Co., New York, N. Y.	New Brighton, M. H. Stager.	400	11.03	24.69	24–27

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
2.88	2.50	6.40	8.50	$34 00	Artificially colored with No. 85 Orange I and No. 4 Naphtol Yellow S.	Gluten feed, colored,--	3840
3.70	2.50	6.18	8.50	26 50	....	Gluten feed, ----------	5159
3.85	2.50	6.32	8.50	1 40	Artificially colored with No. 85 Orange I and No. 4 Naphtol Yellow S.	Gluten feed, colored,--	5060
2.40	2.50	6.93	8.50	31 00	Artificially colored with No. 85 Orange I and No. 4 Naphtol Yellow S.	Gluten feed, colored,--	3827
2.85	2.50	6.64	8.50	33 00	Artificially colored with No. 85 Orange I and No. 4 Naphtol Yellow S.	Gluten feed, colored,--	3795
4.55	2.50	6.75	8.50	32 00	Artificially colored with No. 85 Orange I and No. 4 Naphtol Yellow S.	Gluten feed, colored,--	3791
4.20	2.50	6.35	8.50	30 00	Artificially colored with No. 85 Orange I and No. 4 Naphtol Yellow S.	Gluten feed, colored,--	5048
3.35	2.50	7.32	8.50	33 00	Artificially colored with No. 85 Orange I and No. 4 Naphtol Yellow S.	Gluten feed, colored,--	3948
3.50	2.50	6.80	8.50	27 00	....	Gluten feed, ---------	5167
3.90	2.50	6.73	8.50	32 00	Colored with No. 85 Orange I and No. 4 Naphthol Yellow S.	Gluten feed, colored,--	4123
3.85	2.50	6.19	8.50	26 00	....	Gluten feed, ---------	5178
4.55	2.50	6.62	8.50	32 00	....	Gluten feed, ---------	3719
2.96	2.50	7.17	8.50	1 65	Made from corn, artificially colored with No. 85 Orange I, and No. 4 Napthol Yellow S.	Gluten feed, colored,--	4826
3.58	2.50	6.85	8.50	34 00	Colored with No. 85 Orange I and No. 4 Napthol Yellow S.	Gluten feed, colored,--	3760
4.40	2.50	6.30	8.50	1 40	Colored with No. 85 Orange I and No. 4 Napthol Yellow S.	Gluten feed, colored,--	4994
3.23	2.50	6.65	8.50	1 50	Colored with No. 85 Orange I and No. 4 Napthol Yellow S.	Gluten feed, colored,--	4953
3.05	2.50	6.84	8.50	1 60	Colored with No. 85 Orange I and No. 4 Napthol Yellow S.	Gluten feed, colored,--	3781
4.73	2.50	7.05	8.50	1 50	Colored with No. 85 Orange I and No. 4 Napthol Yellow S.	Gluten feed, colored,--	4939
6.53	....	6.15	....	32 00	....	Gluten feed, ----------	4147
4.13	2.50	6.37	8.50	1 50	Artificially colored with No. 85 Orange I and No. 4 Napthol Yellow S.	Gluten feed, colored,--	4520
4.23	2.50	6.82	8.50	31 00	....	Gluten feed, ---------	3725
2.60	2.50	6.72	8.50	32 00	Artificially colored with No. 86 Orange I and No. 4 Napthol Yellow S.	Gluten feed, colored,--	4420
2.95	2.50	6.86	8.50	32 00	....	Gluten feed, ----------	3978
3.05	2.50	7.13	8.50	1.50	Artificially colored with No. 85 Orange I and No. 4 Napthol Yellow S.	Gluten feed, colored,--	4100

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
4383	Buffalo, Corn Products Ref. Co., New York, N. Y.	Williamsport, Jacob Thomas.	633	8.20	26.31	24-27
4769	Buffalo, Corn Products Ref. Co., New York, N. Y.	Shamokin, J. R. Vought,..	1069	8.45	26.63	24-27
4186	Buffalo, Corn Products Ref. Co., New York, N. Y.	Witmer, Joseph B. Weaver & Son.	486	8.91	26.44	24-27
3812	Buffalo, Corn Products Ref. Co., New York, N. Y.	Athens, J. J. Weller, ...	112	7.83	28.75	24-27
		Average, ...	....	9.20	25.05	....
3837	Cedar Rapids, Douglas & Co., Cedar Rapids, Ia.	Richland Center, S. S. Detweiler.	137	7.09	21.13	22.00
4248	Cedar Rapids, Douglas & Co., Cedar Rapids, Ia.	Parkesburg, E. H. Keen & Co.	548	6.04	20.81	22.00
		Average, ...	....	6.56	20.97	....
4139	Conestoga Choice Yellow, Jonas F. Eby & Son, Lancaster, Pa.	Lititz, Elmer Eby, ...	489	7,27	23.06	24.00
5061	K. K. K., J. C. Hubinger Bros. Co., Keokuk, Iowa.	Erie, A. P. Allen, ...	1361	5.01	23.13	23.00
4306	K. K. K., J. C. Hubinger Bros. Co., Keokuk, Iowa.	Williamsport, F. W. Dawson & Son.	606	6.86	23.00	23.00
5149	K. K. K., J. C. Hubinger Bros. Co., Keokuk, Iowa.	Washington, G. W. McBrier	1449	5.82	24.44	23.00
5006	K. K. K., J. C. Hubinger Bros. Co., Keokuk, Iowa.	Sharpsville, J. H. Miller,..	1306	6.06	23.75	23.00
4985	K. K. K., J. C. Hubinger Bros. Co., Keokuk, Iowa.	Mercer, I. J. Pizor & Son,.	1285	7.16	21.88	23.00
		Average, ...	....	6.18	23.24	....
8724	"P. Bro.," Piel Bros. Starch Co., Indianapolis, Ind.	Indiana, J. L. Orr, ...	24	10.94	24.56	22.50
5087	"P. Bros," Piel Bros. Starch Co., Indianapolis, Ind.	Pottstown, W. H. Saylor & Son.	1387	8.40	21.25	22.5-24.5
		Average, ...	....	9.67	22.91	....
4185	...... S. F. Scattergood & Co., Philadelphia, Pa.	Christiana, B. Frank Walter.	485	7.66	23.06	....
5076	"Union," Union Starch and Ref. Co., Edinburg, Ind.	Pottstown, A. K. Kulp, ...	1376	7.10	21.50	23-25
4425	"Union," C. W. Wagar & Co., Philadelphia, Pa.	Mechanicsburg, A. B. Harnish.	725	7.86	19.06	23-25
		Total average, ...	....	8.44	23.84	....
	Hominy Feed.					
3825	Homco Feed, American Hominy Co., Indianapolis, Ind.	Alba, S. S. Cosper, ...	125	9.27	10.19	8.50
4310	Homco Feed, American, Hominy Co., Indianapolis, Ind.	Williamsport, F. W. Dawson & Son.	610	8.26	11.81	8.50
4609	Homco Feed, American Hominy Co., Indianapolis, Ind.	Philipsburg, Feed Grain Co.	999	8.50	10.19	8.50

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
4.95	2.50	6.10	8.50	$30 00	Artificially colored with No. 85 Orange I and No. 4 Napthol Yellow S.	Gluten feed, colored,--	4333
2.50	2.50	6.25	8.50	1 50	Artificially colored with No. 85 Orange I and No. 4 Napthol Yellow S.	Gluten feed, colored,--	4769
3.75	2.50	6.75	8.50	32 00	Artificially colored with No. 85 Orange I and No. 4 Napthol Yellow S.	Gluten feed, colored,--	4186
4.60	2.50	6.65	8.50	1 60	Artificially colored with No. 85 Orange I and No. 4 Napthol Yellow S.	Gluten feed, colored,--	3812
3.76	....	6.62	....	30 88			
6.80	4.00	6.01	8.00	31 00	....	Gluten feed, ...	3837
5.73	4.00	7.37	8.00	31 00	....	Gluten feed, ...	4248
6.27	....	6.69	....	31 00			
5.23	4.00	6.72	7.00	32 00	....	Gluten feed, ...	4130
4.73	2.00	8.62	7.50	27 00	Artificially colored with Aniline.	Gluten feed, colored,--	5061
5.30	2.00	7.67	7.50	1 60	Artificially colored with Aniline.	Gluten feed, colored,--	4306
5.00	2.00	7.30	7.50	28 00	Artificially colored with Aniline.	Gluten feed, colored,--	5149
5.00	2.00	7.57	7.50	1 45	Artificially colored with Aniline.	Gluten feed, colored,--	5006
6.55	2.00	7.20	7.50	1 60	Artificially colored with Aniline.	Gluten feed, colored,--	4985
5.32	....	7.67	....	29 60			
2.40	2.00	4.97	8.00	34 00	....	Gluten feed, ...	3724
3.50	2.50	6.62	8 00	1 40	....	Gluten feed, ...	3087
2.95	....	5.79	....	31 00			
4.90	....	7.00	....	34 00	....	Gluten feed, ...	4185
4.30	3.00	7.87	8.00	1 40	....	Gluten feed, ...	5076
7.20	3.00	7.82	8.00	30 50	....	Gluten feed, ...	4425
4.26	....	6.75	....	30 69			
9.25	7.00	4.27	7.00	30 00	....	Hominy feed, ...	3825
7.95	7.00	5.10	7.00	1 40	....	Hominy feed, ...	4310
8.13	7.00	4.47	7.00	....	....	Hominy feed, ...	4699

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
4991	Hominy Feed, American Hominy Co., Indianapolis, Ind.	Greenville, Hecker & Reed,-	1291	9.89	10.19	....
4175	Homco Feed, American Hominy Co., Indianapolis, Ind.	Elizabethtown, E. H. Lehman.	475	8.66	12.03	8.50
4255	Homco Feed, American Hominy Co., Indianapolis, Ind.	Mortonville, Monhollend & Dale.	556	7.48	9.19	8.50
		Average, ...	....	8.67	10.61	....
4636	Pure, M. F. Baringer, Philadelphia, Pa.	Altoona, Altoona Grain and Feed Co.	936	8.93	10.69	9.00
4477	...... M. F. Baringer, Philadelphia, Pa.	Myerstown, E. L. Bleistein,	777	10.11	10.75	9.00
4480	...... M. F. Baringer, Philadelphia, Pa.	Myerstown, Z. L. Gingrich,	780	10.27	10.25	9.00
4482	...... M. F. Baringer, Philadelphia, Pa.	Myerstown, Z. L. Gingrich,	782	9.95	9.69	9.00
4143	...... M. F. Baringer, Philadelphia, Pa.	Leamon Place, Harry K. Hershey.	443	11.21	10.13	9.00
4448	...... M. F. Baringer, Philadelphia, Pa.	Harrisburg, J. H. Sheesley,	748	10.14	9.25	9.00
4328	...... M. F. Baringer, Philadelphia, Pa.	Newberry, J. T. Stahlnecker.	628	9.49	10.25	9.00
4335	...... M. F. Baringer, Philadelphia, Pa.	Williamsport, Jacob Thomas.	635	11.16	10.25	9.00
4187	Pure, M. F. Baringer, Philadelphia, Pa.	Witmer, Joseph B. Weaver,	487	9.77	10.38	10.00
4467	...... M. F. Baringer, Philadelphia, Pa.	Myerstown, S. T. Yost,....	767	10.48	10.63	9.00
		Average, ...	....	10.15	10.23	....
4269	...... Buffalo Cereal Co., Buffalo, N. Y.	Kennett Square, W. H. Walker & Co.	569	10.47	9.63	10–11
4675	Ideal, Elevator Milling Co., Springfield, Ill.	Martinsburg, Klepser Bros.	975	8.46	10.75	11.02
4286	"Evans," Evans Milling Co., Indianapolis, Ind.	McVeytown, Wm. M. Atkinson.	586	9.94	10.56	10.00
4137	"Evans," Evans Milling Co., Indianapolis, Ind.	Lititz, Elmer Eby, ...	437	9.31	10.44	10.00
4249	"Evans," Evans Milling Co., Indianapolis, Ind.	Parkesburg, E. H. Keen & Co.	549	8.81	10.75	10.00
4789	"Evans," Evans Milling Co., Indianapolis, Ind.	Milton, C. H. McMahan,...	1089	8.01	10.81	10.00
4198	"Evans," Evans Milling Co., Indianapolis, Ind.	York, Miller Bros., ...	498	7.96	10.88	10.00
3799	"Evans," Evans Milling Co., Indianapolis, Ind.	Ulster, P. C. Pierce, ...	99	7.85	10.88	10.00
4221	"Evans," Evans Milling Co., Indianapolis, Ind.	York, H. H. Smyser, ...	521	9.36	11.13	10.00
4195	"Evans," Evans Milling Co., Indianapolis, Ind.	York, F. Z. Stouffer, ...	495	9.45	10.81	10.00
		Average, ...	....	8.83	10.78	....
3803	...... Husted Milling Co., Buffalo, N. Y.	Monroeton, C. P. Matthews & Sons, Inc.	103	8.34	10.69	9–11
3818	...... Husted Milling Co., Buffalo, N. Y.	Troy, H. M. Spalding & Son.	118	9.07	9.75	9–11
		Average, ...	....	8.70	10.22	....
4182	...... H. E. McEachron Co., Wausau, Wis.	Christiana, B. Frank Walter.	482	9.50	10.75	11.25

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
8.83	....	3.42	....	$1 35		Hominy feed,	4991
8.50	7.00	5.13	7.00	27 00		Hominy feed,	4175
7.98	7.00	3.00	7.00	26 00	White corn product,	Hominy feed,	4255
8.60	....	4.23	....	27 60			
6.75	6.00	5.40	10.00	1 40		Hominy feed,	4636
9.90	6.00	2.60	10.00	26 00		Hominy feed,	4477
8.33	6.00	2.00	10 00	1 45		Hominy feed,	4180
9.08	6.00	4.15	10.00	1 35		Hominy feed,	4482
9.40	6.00	1.89	10.00	30 00		Hominy feed,	4143
8.85	6.00	3.92	10.00	26 00		Hominy feed,	4448
9.13	6.00	4.55	10.00	1 35		Hominy feed,	4328
8.08	6.00	1.98	10.00	28 00		Hominy feed,	4335
9.40	7.00	4.15	10.00	27 00		Hominy feed,	4187
8.50	6.00	2.07	10.00	26 00		Hominy feed,	4467
8.74	....	3.26	....	27 40			
7.03	7-9	3.12	3-4	27 00		Hominy feed,	4269
9.20	7.70	4.90	....	1 50		Hominy feed,	4675
9.68	8.00	4.50	7.00	1 50		Hominy feed,	4286
10.40	8.00	4.80	7.00	30 00	Manufactured from white corn.	Hominy feed,	4137
9.95	8.00	4.42	7.00	30 00	Manufactured from white corn.	Hominy feed,	4249
10.44	8.00	5.42	7.00	1 50	Manufactured from white corn.	Hominy feed,	4780
10.33	8.00	4.87	7.00	1 55	Manufactured from white corn.	Hominy feed,	4198
9.70	8.00	5.57	7.00	1 60	Manufactured from white corn.	Hominy feed,	3799
10.25	8.00	4.75	7.00	28 00	Manufactured from white corn.	Hominy feed,	4221
9.35	8.00	4.77	7.00	28 00	Manufactured from white corn.	Hominy feed,	4195
10.01	....	4.89	....	29 88			
9.78	7-9	4.96	3-5	1 40		Hominy feed,	3833
9.75	7-9	4.67	3-5	1 60		Hominy feed,	3818
9.77	....	4.81	....	30 00			
9.75	8.50	3.98	....	32 00		Hominy feed,	4182

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
			*	Per ct.	Per ct.	Per ct.
4918	Choice Steam Cooked, Miner-Hillard Milling Co., Wilkes-Barre, Pa.	Scranton, Miner-Hillard Milling Co.	1218	9.07	10.69	10-12
4887	Choice Steam Cooked, Miner-Hillard Milling Co., Wilkes-Barre, Pa.	Wilkes-Barre, Robbins Milling Co.	1187	10.21	10.81	10-12
4554	Choice Steam Cooked, Miner-Hillard Milling Co., Wilkes-Barre, Pa.	Allentown, H. N. Schleifer,..	854	9.24	10.75	10-12
		Average, ...	....	9.50	10.75	....
4076	Pure White, National Feed Co., St. Louis, Mo.	Martinsburg, Klepser Bros.,	976	9.27	11.25	8.50-10.50
3772	...... The Patent Cereals Co., Geneva, N. Y.	New Milford, H. B. Carpenter & Co.	72	8.93	11.38	10-11
4644	Yellow, The Quaker Oats Co., Chicago, Ill.	Altoona, Central Feed Co.,	944	8.88	10.31	9.00
3994	Yellow, The Quaker Oats Co., Chicago, Ill.	Jeannette, Keystone Supply Co.	294	10.33	9.88	9.00
5022	Yellow, The Quaker Oats Co., Chicago, Ill.	Oil City, The Magee Feed Co.	1322	10.35	9.56	9.00
5198	Yellow, The Quaker Oats Co., Chicago, Ill.	Braddock, C. B. Marriott & Sons.	1498	10.81	9.50	9.00
4584	Yellow, The Quaker Oats Co., Chicago, Ill.	Mt. Union, David Rummel,	884	8.51	10.88	9.00
		Average, ...	....	9.77	10.03	....
4124	Logan, The Standard Cereal Co., Chillicothe, Ohio.	Lancaster, John W. Eshelman.	424	10.94	10.50	10.00
4292	Logan, The Standard Cereal Co., Chillicothe, Ohio.	Lindsey, Lindsey Milling Co.	592	11.11	10.13	10.00
4180	Logan, The Standard Cereal Co., Chillicothe, Ohio.	Elizabethtown, A. W. Martin.	480	10.12	10.06	10.00
4468	Standco, The Standard Cereal Co., Chillicothe, Ohio.	Myerstown, S. T. Yost, ..	768	9.70	11.69	11.50
		Average, ...	....	10.46	10.60	....
5117	Pure, C. W. Wagar & Co., Philadelphia, Pa.	Doylestown, H. S. Beidler,	1417	10.17	9.75	9-11
5101	Pure, C. W. Wagar & Co., Philadelphia, Pa.	Chester, Chester Milling Co.	1401	9.61	10.50	8.00
4261	Pure, C. W. Wagar & Co., Philadelphia, Pa.	West Chester, E. D. Hemphill.	561	8.71	10.00	8.00
5075	Pure, C. W. Wagar & Co., Philadelphia, Pa.	Pottstown, A. K. Kulp, ...	1375	8.13	10.31	9-10
4155	Pure, C. W. Wagar & Co., Philadelphia, Pa.	Kinzer, E. E. & W. J. L. Walker.	455	9.06	10.56	8.00
		Average, ...	....	9.13	10.22	....
4148	"Keystone," Unknown, ...	Manheim, F. K. Nauman,.	448	10.41	11.81	....
		Total average, ...	....	9.46	10.49	....
	Flakeline.					
4884	Choice Steam Cooked, Miner-Hillard Milling Co., Wilkes-Barre, Pa.	Wilkes-Barre, Robbins Milling Co.	1184	8.26	10.25	10-12
	Maizeline.					
4257	...... C. W. Wagar & Co., Philadelphia, Pa.	West Chester, I. H. Bailey,	557	5.94	8.69	7.00

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
9.00	7.50-9	4.65	3-5	$27 00	....	Hominy feed, ...	4918
8.55	7.50-9	4.35	3-5	28 00	....	Hominy feed, ...	4897
9.50	7.50-9	3.95	3-5	1 50	....	Hominy feed, ...	4554
9.02	....	4.31	....	28 33			
9.13	7-8.50	6.55	10.00	1 50	Made from pure corn, ...	Hominy feed, ...	4676
8.50	7-8	4.15	....	1 56	....	Hominy feed, ...	3772
8.23	4.00	3.65	4.00	1 80	....	Hominy feed, ...	4644
8.98	4.00	3.67	4.00	30 00	....	Hominy feed, ...	3994
6.80	4.00	3.52	4.00	1 25	....	Hominy feed, ...	5022
5.15	4.00	2.42	4.00	1 75	....	Hominy feed, ...	5198
8.13	4.00	3.65	4.00	1 60	....	Hominy feed, ...	4584
7.25	....	3.38	....	31 60			
8.85	7.00	2.00	6.00	28 00	....	Hominy feed, ...	4124
8.05	7.00	4.00	6.00	1 55	....	Hominy feed, ...	4292
8.88	7.00	4.02	6.00	27 00	....	Hominy feed, ...	4180
10.90	8.00	3.00	4.00	26 00	....	Hominy feed, ...	4468
9.16	....	3.25	....	28 00			
7.08	6.5-9	3.60	7.00	26 00	Pure and unadulterated hominy feed.	As certified, ...	5117
7.15	6.00	3.77	10.00	1 50	....	Hominy feed, ...	5101
7.45	6.00	4.10	10.00	28 00	....	Hominy feed, ...	4261
8.45	6.50-9	4.18	7.00	1 40	Pure and unadulterated hominy feed.	As certified, ...	5075
8.58	6.00	3.90	10 00	1 50	....	Hominy feed, ...	4155
7.74	....	3.91	....	28 00			
9.13	....	3.45	....	30 00	....	Hominy feed, ...	4148
8.78	....	3.98	....	28 29			
9 85	7.50-9	3.57	6-9	30 00	....	Flakeline, ...	4884
6.78	4.00	9.23	18.00	30 60	....	Maizeline feed, ...	4287

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
5118	...... C. W. Wagar & Co., Philadelphia, Pa.	Doylestown, H. S. Beidler,..	1418	6.70	8.88	7.00
5100	...... C. W. Wagar & Co., Philadelphia, Pa.	Chester, Chester Milling Co.	1400	6.59	8.13	7.00
4262	...... C. W. Wagar & Co., Philadelphia, Pa.	West Chester, E. D. Hemphill.	562	7.02	8.56	7.00
4273	...... C. W. Wagar & Co., Philadelphia, Pa.	West Chester, C. C. Hipple & Son.	573	7.16	8.31	7.00
5074	...... C. W. Wagar & Co., Philadelphia, Pa.	Pottstown, A. K. Kulp,.....	1374	6.84	9.38	7.00
5004	...... C. W. Wagar & Co., Philadelphia, Pa.	Pottstown, W. H. Moser,..	1394	6.87	8.69	7.00
5082	...... C. W. Wagar & Co., Philadelphia, Pa.	Pottstown, S. B. Wagner & Co.	1382	6.67	8.63	7.00
		Average, ...	....	6.72	8.66	....
	Corn Bran.					
4125	...... John W. Eshelman, Lancaster, Pa.	Lancaster, John W. Eshelman.	425	11.42	7.94	7.00
3835	...... The Heffner Milling Co., Circlesville, Ohio.	Richland Center, Allen K. Smith.	135	7.97	10.13	7.00
		Average, ...	....	9.69	9.04	....
	WHEAT OFFALS.					
	Low Grade Flour.					
4522	Atlas Red Dog, Atlas Flour Mills, Milwaukee, Wis.	Kutztown, John A. Schwoyer.	822	9.66	19.94	18.00
4542	Badger Red Dog, Berger-Crittenden Milling Co., Milwaukee, Wis.	Allentown, Frank J. Erdman.	842	11.24	16.56	18.00
5332	Badger Red Dog, Berger-Crittenden Milling Co., Milwaukee, Wis.	Franklin, Johnson & Co.,..	1332	11.35	16.75	16.75
4403	Badger Red Dog, Berger-Crittenden Milling Co., Milwaukee, Wis.	Newville, S. E. Shenk, ...	703	11.03	17.31	16.75
3958	Fancy White Shorts, Aug. J. Bulte Milling Co., Kansas City, Mo.	Ridgway, Smith Bros. Co.,	258	10.96	16.25	14.00
4658	Red Dog, George C. Christian, Minneapolis, Minn.	Altoona, E. D. Clark, ...	958	10.40	18.75	15.50
4901	Pure Wheat Feed Red Dog Flour, L. Christian & Co., Minneapolis, Minn.	Wilkes-Barre, Wilkes-Barre Milling Co.	1201	11.30	16.31	....
4323	...... H. C. Cole Milling Co., Chester, Ill.	Williamsport, W. F. Coleman.	623	11.18	17.75	16.00
4916	Red Dog, Commander Mill Co., Minneapolis, Minn.	Nanticoke, Gibbs Milling Co.	1216	10.59	18.06	15.25
3912	Superior Red Dog, Eagle Roller Mill Co., New Ulm, Minn.	St. Marys, L. Ritter, ...	212	11.41	19.00	16.90
5036	Fancy White Middlings, Emlenton Milling Co., Ltd., Emlenton, Pa.	Emlenton, Emlenton Milling Co., Ltd.	1336	12.32	14.75	....
4700	Red Dog, Globe Elevator Co., Buffalo, N. Y.	Philipsburg, Feed Grain Co.	1000	10.90	18.06	14-16
4749	Red Dog, Globe Elevator Co., Buffalo, N. Y.	Wallaceton, E. K. Turner,	1049	10.33	17.06	14-16
4565	Pure Red Dog, Hubbard Milling Co., Mankatoo, Minn.	Allentown, John E. Schnon,	865	9.55	17.56	14.40

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
7.23	4.00	8.25	13.00	$27 00	....	Maizeline feed, ...	5118
7 13	4.00	10.10	13.00	30 00	....	Maizeline feed, ...	5100
7 18	4.00	9.10	13.00	28 00	....	Maizeline feed, ...	4262
6.45	4.00	9.47	13.00	30 00	....	Maizeline feed, ...	4273
8 05	4.00	7.60	13 00	1 45	....	Maizeline feed, ...	5074
7 35	4.00	8.50	13 00	1 40	....	Maizeline feed, ...	5094
6 88	4.00	9.62	13.00	28 00	....	Maizeline feed, ...	5082
7.13	....	8.98	....	28 75			
2.92	4.00	7.82	9.00	24 00	....	Corn bran, ...	4125
8.65	5.00	12.05	15.00	1 45	....	Corn bran, ...	3835
5.79	....	9.68	....	26 50			
6.03	5.00	3.05	3.50	1 70	Made from pure wheat and unadulterated.	As certified, ...	4522
3.78	4.00	1.97	2.50	1 70	Pure and unadulterated wheat product.	As certified, ...	4542
3.78	3.75	2.87	2.75	32 00	Pure and unadulterated wheat product.	As certified, ...	5082
4.08	3.75	2.12	2.75	31 00	Pure and unadulterated wheat product.	As certified, ...	4408
3.90	4.25	1.91	1.00	1 75	....	Flour middlings, ...	3968
5 50	3.50	2.77	4.00	1 70	Pure wheat red dog flour,	As certified, ...	4658
3 20	....	2.02	....	1.75	Pure wheat feed, red dog flour.	As certified, ...	4901
4.48	4.50	3.50	5.00	1 60	Pure soft winter wheat,--	As certified, ...	4323
4.03	3.35	1.42	2.50	1 70	....	Flour middlings, ...	4916
5.50	4.80	3.02	3.90	34 00	....	Flour middlings, ...	3912
3 18	....	1.52	....	32 00	Pure and unadulterated wheat middlings.	As certified, ...	5036
4.83	3-5	3.42	3-4	1 80	Red dog flour, ...	As certified, ...	4700
4 90	3-5	4.12	3-4	35 00	....	Flour middlings, ...	4749
4.98	3.20	3.72	2.30	1 80	Pure red dog, ...	As certified, ...	4565

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
4525	Wheat Middlings, Kutztown Roller Mills, Kutztown, Pa.	Kutztown, Kutztown Roller Mills.	825	10.24	13.29	-------
4726	Castle Rock Flour, O. Manegold Milling Co., Milwaukee, Wis.	Du Bois, A. T. Sprankle,--	1026	11.14	18.44	16.00
4871	Pure Red Dog, C. P. Matthews & Sons, Inc., Scranton, Pa.	Wilkes-Barre, C. P. Matthews & Sons, Inc.	1171	10.74	18.69	15-16.75
5019	Hardenberghs Choice, National Milling Co., Minneapolis, Minn.	Oil City, New Model Milling Co.	1319	10.95	17.44	16–18
4299	Hardenberghs, National Milling Co., Minneapolis, Minn.	Reynoldsville, Wallace & Stefl.	599	10.82	16.69	16–18
3921	XXX Comet, Northwestern Consolidated Milling Co., Minneapolis, Minn.	Kane, Swanson Grocery Co.	221	10.93	18.69	17.00
4789	Fancy Spring Low Grade Northwestern Milling Co., Little Falls, Minn.	Clearfield, John W. Smith & Bro.	1089	9.16	18.69	15.70
4643	Bixota Red Dog, Red Wing Milling Co., Red Wing, Minn.	Altoona, Central Feed Co.,	943	9.96	18.63	18.00
4553	Pure Wheat Middlings, H. N. Schleifer, Allentown, Pa.	Allentown, H. N. Schleifer,	858	12.09	12.94	-------
3960	Low Grade, George Urban Milling Co., Buffalo, N. Y.	Bradford, L. A. Fischer & Co.	230	10.55	19.13	-------
		Average, --------------	-------	10.78	17.36	-------
	Wheat Middlings.					
5163	Trojan, The Allen & Wheeler Co., Troy, Ohio.	Canonsburg, Canonsburg Milling Co.	1463	9.85	16.63	15.06
4378	A. B. C. Annan, Burg & Co., St. Louis, Mo.	Chambersburg, Diehl, Omwake & Diehl.	678	10.26	18.13	17.00
4852	Pure, Aqueduct Mills. Bloomsburg, Pa.	Catawissa, W. A. M'Cloughan.	1152	8.78	15.44	15.20
4383	Atlas Extra Flour, Atlas Flour Mills, Milwaukee, Wis.	Shippensburg, Allison & Fogelsonger.	683	9.14	17.44	16.00
4596	------ The Ansted & Burk Co., Springfield, Ohio.	Bedford, N. M. Diehl, -----	896	9.48	17.19	14.50–16.50
4965	Ballards Shipstuff, Ballard & Ballard Co., Louisville Ky.	Butler, B. F. Shannon & Co.	1265	9.21	16.88	15.69
3888	Banner Flour Middlings, Baner Milling Co., Buffalo, N. Y.	Port Allegany, Port Allegany Milling Co.	188	11.03	16.94	-------
4105	Fancy, Barber Milling Co., Minneapolis, Minn.	Monaca, Monaca Boiler Mills.	405	11.40	17.06	17.00
4327	Medium White, M. F. Baringer, Philadelphia, Pa.	Newberry, J. T. Stabnecker.	627	9.51	16.38	-------
4334	------ M. F. Baringer, Philadelphia, Pa.	Williamsport, Jacob Thomas.	684	9.88	17.75	-------
4449	Pure, U. G. Barnitz, Barnitz, Pa.	Harrisburg, J. H. Sheasley,	749	11.58	13.44	-------
4382	Badger Flour Middlings, Berger-Crittenden Milling Co., Milwaukee, Wis.	Shippensburg, Allison & Fogelsonger.	682	11.37	17.81	17.00
4415	Badger Flour Middlings, Berger-Crittenden Milling Co., Milwaukee, Wis.	Mt. Holly Springs, Perry Harman.	715	10.82	17.81	17.00

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
2.48	....	1.10	....	$1.65	Wheat middlings, ...	As certified, ...	4525
3.75	4.00	1.52	2.00	1 85	....	Flour middlings, ...	4726
6.70	4-4.58	2.62	3.28-4	1 70	Pure red dog flour, ...	As certified, ...	4871
5.88	4.50-5.50	3.87	....	30 00	Pure and unadulterated wheat middlings.	As certified, ...	5019
4.09	4.50-5.50	3.00	....	1 60	Pure and unadulterated wheat middlings.	As certified, ...	4299
5.95	4.50	2.39	2.50	34 00	Red dog wheat flour, ...	As certified, ...	3921
4.63	3.50	2.05	....	1.75	....	Flour middlings, ...	4739
4.70	5.00	1.60	1.31	1 75	....	Flour middlings, ...	4643
3.00	....	1.57	....	1 60	Pure wheat middlings, ...	As certified, ...	4553
5 30	....	1.02	....	33 00	....	Flour middlings, ...	3930
4.53	....	2.40	....	33 71			
4.60	4.00	6.21	6.00	30 00	Pure wheat feed, ...	As certified, ...	5163
5.00	4.00	4.97	....	1 45	Pure wheat middlings, ...	As certified, ...	4378
4.33	3.24	4.05	6-8	1 60	Pure wheat middlings, ...	As certified, ...	4852
5.45	5.00	7.57	8.00	29 00	Made from pure wheat and unadulterated.	As certified, ...	4383
5.03	4-5.50	6.30	4-7.50	30 00	....	Wheat middlings, ...	4596
5.18	4.26	6.47	6.87	29 00	All wheat product, ...	As certified, ...	4965
5.95	....	5.97	....	1.60	Pure wheat, ...	As certified, ...	3888
5.00	5.00	4.49	6.00	30 00	Pure wheat middlings, ..	As certified, ...	4105
4.80	....	6.20	....	1 45	....	Wheat middlings, ...	4327
5.20	....	4.80	....	30 00	....	Wheat middlings, ...	4334
3.08	....	1.75	....	1 65	Pure wheat middlings, ...	As certified, ...	4449
4.95	4.00	4.95	5.00	30 00	Pure and adulterated wheat product.	As certified, ...	4382
4.78	4.00	5.10	5.00	30 00	Pure and adulterated wheat product.	As certified, ...	4415

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
4400	Badger Standard, Berger-Crittenden Milling Co., Milwaukee, Wis.	Newville, S. E. Shenk, ...	700	9.91	17.50	16.50
4418	Badger Flour Middlings, Berger-Crittenden Milling Co., Milwaukee, Wis.	Mt. Holly Springs, J. N. Weigel.	718	9.88	17.88	16.25
4956	Pure, Bernet, Craft & Kauffman Milling Co., St. Louis, Mo.	Butler H. J. Klingler & Co.	1256	9.86	17.00	17.25
3858	...... The Burkett Mills, Penn Yan, N. Y.	Westfield, L. Plank, ...	158	10.68	16.44	....
5025	Pure, Blaine, Mackey, Lee Co., North East, Pa.	Tionesta, Lanson Bros. ...	1325	11.77	16.81	15.00
4765	...... Blank & Gottshall, Sunbury, Pa.	Sunbury, Blank & Gottshall.	1065	10.98	16.50	14-16
4816	...... Blank & Gottshall, Sunbury, Pa.	Selinsgrove, H. J. Doebler,	1116	10.16	17.31	....
4806	...... Buffalo Flour Milling Co., Lewisburg, Pa.	Lewisburg Buffalo Flour Milling Co.	1106	9.33	17.50	....
4777	...... Buffalo Flour Milling Co., Lewisburg, Pa.	Milton, Thomas R. Hull,	1077	9.88	17.19	....
4819	Standard, Cannon Valley Milling Co., Mineapolis, Minn.	Selinsgrove, P. A. Herman,	1119	8.56	16.81	14-18
3816	...... Cayuta Mills, Sayre, Pa.	Sayre, Cayuta Mills, ...	116	14.26	15.25	....
4462	Choice Flour Middlings, L. Christian & Co., Minneapolis, Minn.	Lebanon, A. M. Weltmer's Sons.	762	10.74	18.25	17.50
4458	...... City Flouring Mills, Lebanon, Pa.	Lebanon, City Flouring Mills.	758	8.91	15.56	....
4459	......City Flouring Mills, Lebanon, Pa.	Lebanon, City Flouring Mills.	759	10.91	14.63	....
4857	Claro, Claro Milling Co., Lakeville, Minn.	Berwick, H. L. Garrison & Bro.	1157	8.68	17.94	15-18
3774	Claro, Claro Milling Co., Lakeville, Minn.	New Milford, John J. Potter.	74	10.84	17.94	14-17
4031	Choice, The Colton Bros. Co., Bellefontaine, Ohio.	McKeesport, A. Davison, ..	331	10.77	17.25	....
4353	Choice, The Colton Bros. Co., Bellefontaine, Ohio.	Bellefonte, C. Y. Wagner,.	658	11.76	17.44	....
4718	Commander Flour, Commander Mill Co., Minneapolis, Minn.	Munson Station, Jacob Smutzinger.	1018	10.13	18.63	15.00
4088	Choice Fine, The Commercial Milling Co., Cleveland, Ohio.	Manorville, Gruskin Bros.,	388	12.42	17.94	15-19
5044	Choice Fine, The Commercial Milling Co., Cleveland, Ohio.	Titusville, Titusville City Mills.	1344	12.20	17.31	....
4350	...... Coppes, Zook & Mutschler Co., Nappanee, Ind.	Gettysburg, C. M. Wolf, Jr.	659	10.32	17.94	17.20
4389	Fine, Cream City Milling Co., Milwaukee, Wis.	Scotland, M. Ickes, ...	689	10.16	17.81	16.50
4376	Fine, Cream City Milling Co., Milwaukee, Wis.	Chambersburg, George Walker.	676	9.84	19.31	16.50
4720	Standard, William G. Crocker, Minneapolis, Minn.	Munson Station, Jacob Smutzinger.	1020	10.28	18.31	15.00
4326	Flour, William G. Crocker, Mineapolis, Minn.	Newberry, J. F. Stahlnecker	626	10.15	18.50	17.00
4912	...... Crosby Roller Milling Co., Topeka, Kansas.	Nanticoke, Bergin & Co.,---	1212	10.48	17.88	15.00
5008	Fancy, Crouch Bros. Co., Erie, Pa.	Oil City, Clyde D. Duffee,.	1308	10.49	16.00	14.00

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
5.15	4.00	8.07	8.50	$28 00	Pure and adulterated wheat product.	As certified, ...	44[illegible]0
5.70	4.00	8.12	9.18	1 85	Pure and unadulterated wheat product.	As certified, ...	4418
4.55	4.96	4.00	....	1 60	Made from pure wheat,..	As certified, ...	4956
6.06	....	5.41	....	1 55	Pure and unadulterated wheat middlings.	As certified, ...	3858
4.83	5.00	4.37	....	1 60	Pure wheat middlings, ...	As certified, ...	5025
4.90	4.50-5	4.85	4-4.50	1 45	Wheat middlings, ...	As certified, ...	4765
4.80	....	5.77	....	1 60	Wheat middlings, ...	As certified, ...	4816
5.00	....	6.92	....	28 00	Wheat middlings, ...	As certified, ...	4806
4.78	....	6.45	....	1.60	....	Wheat middlings, ...	4777
6.00	4-6	7.25	8.00	1 40	Pure hard wheat middlings.	As certified, ...	4819
5.10	....	5.58	....	31 00	....	Wheat middlings, ...	[illegible]8[illegible]6
5.40	5.15	4.60	5.60	30 00	Pure wheat middlings.	As certified, ...	4462
4.83	....	9.25	....	27 00	Wheat shorts, ...	As certified, ...	4458
3.63	....	2.92	....	28 00	Wheat middlings, ...	As certified, ...	4459
5.90	3-6	7.10	6-8	28 00	....	Wheat middlings, ...	4857
6.05	3-5	6.90	....	1 50	....	Wheat middlings, ...	3774
4.55	....	5.17	....	32 00	From winter wheat, ground screenings included.	Wheat middlings and trace of screenings.	4031
4.58	....	4.95	....	31 00	From winter wheat, ...	As certified, ...	4853
6.23	4.50	5.00	5.00	32 00	Pure middlings, ...	As certified, ...	4718
4.85	6-7	3.50	....	1 60	Pure wheat and screenings.	Wheat middlings and trace of screenings.	4088
4 00	....	3.97	....	30 00	Natural run of wheat,....	As certified, ...	5044
5.88	4.70	5.97	5.50	1 50	Pure wheat middlings, ..	As certified, ...	4350
5.98	5.50	9.90	8 00	26 00	....	Wheat middlings, ...	4389
5.80	5.50	7.55	8.00	1 40	....	Wheat middlings, ...	4376
5.65	4.00	7.72	8.00	29 00	Pure hard wheat middlings.	As certified, ...	4720
6.13	5.00	6.65	8.00	1 45	....	Wheat middlings, ...	4326
4.58	4.00	4.07	1.00	1 55	Wheat Middlings, ...	As certified, ...	4912
3.90	3.50	3.50	2.12	33 00	Wheat Middlings, ...	As certified, ...	50[illegible]8

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein. Found.	Crude Protein. Guaranteed.
				Per ct.	Per ct.	Per ct.
4337	Fancy, Crouch Bros. Co., Erie, Pa.	Lock Haven, F. H. Dyer,..	637	10.90	15.00	14.09
4834	...... Danville Milling Co., Danville, Pa.	Danville, Danville Milling Co.	1134	10.86	16.00	....
3794	...... Dayton Milling Co., Towanda, Pa.	Towanda, Dayton Milling Co.	94	10.27	16.56	....
4616	...... Delp, Ettinger & Co., Bourbon, Ind.	Altoona, J. B. Forsht, ...	916	9.24	17.38	....
4312	"S," Duluth-Superior Milling Co., Duluth, Minn.	Williamsport, F. W. Dawson & Son.	612	9.61	18.25	16-25
4810	...... Duluth-Superior Milling Co., Duluth, Minn.	Mifflinburg, T. E. Spiegelmeyer.	1110	9.30	17.19	16.15
4770	'S," Suluth-Superior Milling Co., Duluth, Minn.	Shamokin, J. R. Vought,.	1070	9.65	18.00	16.25
4864	...... Duncannon Flouring Mill Co., Duncannon, Pa.	Duncannon, Duncannon Flouring Mills Co.	1164	11.85	15.19	....
4135	...... Jonas F. Eby & Son, Lancaster, Pa.	Lititz, Aaron G. Hershey,..	435	11.43	17.50	....
3969	...... B. A. Eckhart Milling Co., Chicago, Ill.	Irwin, Irwin Flour Mill Co.,	289	9.47	17.63	15.00
4172	Pure, B. A. Eckhart Milling Co., Chicago, Ill.	Elizabethtown, E. H. Lehman.	472	9.79	17.13	15.00
4218	Pure, B. A. Eckhart Milling Co., Chicago, Ill.	York, F. Loucks & Son,...	518	9.58	17.88	15.00
4177	Pure, B. A. Eckhart Milling Co., Chicago, Ill.	Elizabethtown, A. W. Martin.	477	10.40	17.19	15.00
4149	Pure, Eckhart & Swan Milling Co., Chicago, Ill.	Manheim, F. K. Nauman,.	449	9.61	17.06	....
4276	...... Elder & Eckbert, Lewistown, Pa.	Lewistown, Elder & Eckbert	576	9.64	18.44	....
3863	...... Elkland Roller Mills, Elkland, Pa.	Elkland, Elkland Roller Mills.	163	10.19	19.06	....
4126	Eclipse White, Elysian Milling Co., Elysian, Minn.	Lancaster, Fred. Pontz,....	426	11.29	18.06	17.30
4127	Eclipse Standard, Elysian Milling Co., Elysian, Minn.	Lancaster, Fred. Pontz,....	427	10.76	18.63	15.20
3895	...... Emporium Milling Co., Emporium, Pa.	Emporium, Emporium Milling Co.	195	10.47	18.06	15.00
3878	...... Eulalia Milling Co., Coudersport, Pa.	Coudersport, Eulalia Milling Co.	178	10.04	17.81	....
3728	Eaco Winged Horse, Everett-Aughenbaugh & Co., Waseca, Minn.	Indiana, J. L. Orr, ...	28	9.56	17.94	15-19
4144	Winter, Excelsior Roller Mills, Avondale, Pa.	Leaman Place, Harry K. Hershey.	444	9.91	15.63	....
4797	...... H. L. Follmer, Watsontown, Pa.	Watsontown, H. L. Follmer.	1097	9.65	17.50	....
3901	...... Gamble, Gheen & Co., Bellefonte, Pa.	Emporium, E. J. Smith,...	201	12.31	16.25	....
4631	Snowball Flour, The Gardner Mills, Hastings, Minn.	Altoona, Altoona Feed Mills.	931	11.04	18.06	16.50
4634	Snowball Flour, The Gardner Mills, Hastings, Minn.	Altoona, Altoona Grain and Feed Co.	934	9.95	18.25	16.50
4314	Snowball Flour, The Gardner Mills, Hastings, Minn.	Williamsport, M. E. Donnell & Co.	614	9.52	18.06	16.50
3740	Standard, The Gardner Mills, Hastings, Minn.	Carrolltown, W. A. Eckenrode.	40	11.34	17.19	15.80
4787	Snowball Flour, The Gardner Mills, Hastings, Minn.	Du Bois, S. A. Eisenman,.	1087	10.23	18.00	16.50
4504	Snowball Flour, The Gardner Mills, Hastings, Minn.	Reading, Reading Grain Co.	804	10.18	18.13	16.50
4509	Snowball Flour, The Gardner Mills, Hastings, Minn.	Reading, W. T. Snyder, ..	809	11.27	17.88	16.50
4701	...... Globe Elevator Co., Buffalo, N. Y.	Philipsburg, Feed Grain Co.	1001	10.60	18.06	13-18
4750	Fancy White, Globe Elevator Co., Buffalo, N. Y.	Wallaceton, E. R. Turner,	1050	9.71	16.81	13-15

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
3.15	3.50	1.80	2.12	$1 70	Pure wheat middlings, ---	As certified, ----------	4887
4.23	--------	4.85	--------	30 00	Wheat middlings, ---------	Wheat middlings and trace of corn cockle.	4984
5.63	--------	4.96	--------	32 00	--------------------------	Wheat middlings, ----	3794
4.93	--------	5.15	--------	30 00	Pure wheat middlings, ---	As certified, ----------	4616
5.70	5.00	6.77	8.00	1 35	Pure wheat middlings, ---	As certified, ----------	4812
5.70	5.00	7.42	8.00	1 50	Pure wheat middlings, ---	As certified, ----------	4810
5.53	5.00	7.83	8.00	1 40	Wheat middlings, ---------	As certified, ----------	4770
4.03	--------	3.15	--------	31 00	Wheat middlings, ---------	As certified, ----------	4864
6.30	--------	5.90	--------	29 00	Pure wheat middlings, ---	As certified, ----------	4185
5.30	4.00	7.17	6.00	29 00	Pure wheat middlings, ---	Wheat middlings, including weed seeds.	3989
5.05	4.00	6.73	6.00	26 00	Pure wheat middlings, ---	As certified, ----------	4172
5.30	4 00	6.85	6.00	1 35	Pure wheat middlings, ---	As certified, ----------	4218
5.20	4 00	7.08	6 00	26 00	Pure wheat middlings, ---	As certified, ----------	4177
4.88	--------	6.67	--------	28 00	Pure wheat middlings, ---	As certified, ----------	4149
5.83	--------	3.90	--------	1 60	Wheat middlings, ---------	As certified, ----------	4276
6 13	--------	3.91	--------	30 00	Pure wheat middlings, ---	As certified, ----------	3863
6.30	4.30	4.85	7.20	29 00	Pure wheat eclipse middlings.	As certified, ----------	4126
6.30	4.40	6.01	7.40	27 50	Pure wheat eclipse standard middlings.	Wheat middlings and trace of corn cockle.	4127
5.48	3.00	5.15	--------	33 00	Wheat middlings, ---------	As certified, ----------	3895
6.00	--------	5.25	--------	33 00	Wheat middlings, ---------	As certified, ----------	3878
6.13	3-6	7.72	6-9	33 00	--------------------------	Wheat middlings, ----	3728
5.78	--------	3.92	--------	32 00	Pure and unadulterated,-	As certified, ----------	4144
5.55	--------	4.77	--------	1 50	Wheat middlings, ---------	As certified, ----------	4797
4.83	--------	4.95	--------	1 65	Pure wheat middlings, ---	As certified, ----------	3901
4.80	4.70	5.50	--------	1 60	Wheat middlings, ---------	As certified, ----------	4631
5.33	4.70	6.20	--------	1 50	Wheat middlings, ---------	Wheat middlings and trace of weed seeds.	4634
5.53	4.70	6.87	--------	1 50	Wheat middlings, ---------	As certified, ----------	4814
4.75	4.50	7.10	--------	1 60	Wheat middlings, ---------	As certified, ----------	3740
5.40	4.70	6.17	--------	1.50	Wheat middlings, ---------	As certified, ----------	4737
5.48	4.70	6.50	--------	1 50	Wheat middlings, ---------	Wheat middlings and considerable proportion of weed seeds.	4504
4.83	4.70	5.72	--------	1 60	Wheat middlings, ---------	Wheat middlings and trace of weed seeds.	4509
5.30	4-5	5.65	8-9	1 70	Wheat flour middlings, ---	As certified, ----------	4701
5.15	4-5	5.22	8.9	32 00	Wheat middlings, ---------	As certified, ----------	4759

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein. Found.	Crude Protein. Guaranteed.
				Per ct.	Per ct.	Per ct.
5173	Brown, Goshen Milling Co., Goshen, Ind.	Carnegie, C. A. Foster, ...	1473	11.62	15.50	....
5122	...... Goshen Milling Co., Goshen, Ind.	Windber, Weaver & Berkey,	1422	10.64	15.88	....
4041	Gwinn's Pure, The Gwinn Milling Co., Columbus, Ohio.	Belle Vernon, Reichard Bros.	341	9.10	18.19	17.00
4678	...... Hagey Bros., Martinsburg, Pa.	Martinsburg, Hagey Bros.,	978	11.06	15.31	....
4828	...... Haney-Frazier Milling Co., Danville, Pa.	Danville, Haney-Frazier Milling Co.	1128	10.45	16.38	....
4851	...... Haney-Frazier Milling Co., Danville, Pa.	Catawissa, W. A. M'Cloughhan.	1151	9.86	16.56	....
3986	...... Hardman & Heck, Pittsburg, Pa.	Irwin, Taylor Kunkle, ...	286	9.23	17.31	15-19
3963	...... Hardman & Heck, Pittsburg, Pa.	Derry, J. O. Nicely, ...	263	9.64	17.50	15-19
4383	......Harmony Cereal Co., Harmony, Pa.	Harmony, Harmony Cereal Co.	1283	11.35	16.81	....
4380	...... The Hicks Brown Milling Co., Mansfield, Ohio.	Chambersburg, Diehl, Umwake & Diehl.	680	10.29	16.25	16.88
4610	...... The Hicks Brown Milling Co., Mansfield, Ohio.	Wilkinsburg, Jordan & Steenson.	910	8.89	17.69	16.88
4416	...... John Hoffer Flouring Mill Co., Steelton, Pa.	Steelton, John Hoffer Flouring Mill Co.	746	8.55	17.50	....
4447	...... John Hoffer Flouring Mill Co., Steelton, Pa.	Steelton, John Hoffer Flouring Mill Co.	747	9.67	15.94	....
4406	Pure, John Hoffer Flouring Mill Co., Steelton, Pa.	Carlisle, Paxton Flour and Feed Co.	706	9.68	16.06	....
4093	...... J. H. Hornby & Sons, New Brighton, Pa.	New Brighton, J. H. Hornby & Sons.	393	10.58	17.75	....
3788	Ivory, Hunter-Robinson-Wenz Milling Co., St. Louis, Mo.	Susquehanna, Homer E. Spencer.	88	9.77	15.88	14.5-17
4354	Ivory, Hunter-Robinson-Wenz Milling Co., St. Louis, Mo.	Bellefonte, C. Y. Wagner,.	654	11.27	19.88	14.5-17
4559	...... George A. Keck & Co., Allentown, Pa.	Allentown, Edwin S. Koch,.	859	11.85	14.63	....
3871	...... The Wm. Kelly Milling Co., Hutchinson, Kansas.	Knoxville, Deerfield Milling Co.	171	9.63	19.25	17.00
3892	...... The Wm. Kelly Milling Co., Hutchinson, Kansas.	Port Allegany, C. O. Neptune.	192	10.32	19.13	17.00
4158	Carnation, Kemper Mill and Elevator Co., Kansas City, Mo.	Kinzer, E. E. & W. J. L. Walker.	458	9.78	17.50	16.00
5195	Eagle, J. B. A. Kern & Sons, Milwaukee, Wis.	Braddock, A. Hecht, ...	1495	9.12	18.25	17.00
5196	Flour, J. B. A. Kern & Sons, Milwaukee, Wis.	Braddock, A. Hecht, ...	1496	9.44	18.00	17.50
4673	...... Klepser Bros., Martinsburg, Pa.	Martinsburg, Klepser Bros.,	973	9.95	16.75	....
4463	...... Lebanon Milling Co., Lebanon, Pa.	Lebanon, Lebanon Milling Co.	763	10.97	17.31	....
4069	...... Leechburg Flouring Mill, Leechburg, Pa.	Leechburg, Leechburg Flouring Mill.	369	10.61	15.25	....
4349	...... The Lee-Warren Milling Co., Salina, Kansas.	Renovo, A. P. Pfoutz, ...	649	9.37	19.69	16.00
4685	...... C. E. Lingafelt, Hollidaysburg, Pa.	Hollidaysburg, C. E. Lingafelt.	985	9.90	16.44	....
4324	Spring Wheat Standard, Listman Mill Co., La Crosse, Wis.	Williamsport, D. Plankenhorn.	624	9.41	19.00	15.00

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
4.53	--------	5.14	--------	$28 00	----------------------------	Wheat middlings, -----	5173
4.30	--------	10.35	--------	29 00	Wheat middlings, --------	As certified, -----------	5122
4.95	4.60	4.97	6.00	1 60	Pure wheat middlings, ---	As certified, -----------	4041
3.53	--------	2.82	--------	1 60	Wheat middlings, --------	As certified, -----------	4678
4.48	--------	4.07	--------	1 50	Wheat middlings, --------	As certified, -----------	4828
4.75	--------	4.47	--------	1 60	Wheat middlings, --------	As certified, -----------	4851
5.25	4-6	7.10	--------	1 45	Pure wheat middlings, ----	Wheat middlings, including weed seeds.	3986
5.13	4-6	7.29	--------	1 70	Pure wheat middlings, ---	Wheat middlings, including weed seeds	3963
5.25	--------	4.95	--------	1 40	Wheat middlings, --------	As certified, -----------	4983
4.65	4.98	6.42	6.00	28 00	Pure wheat product, -----	As certified, -----------	4380
5.00	4.98	6.00	6.00	1 60	Pure wheat product, -----	As certified, -----------	4610
6.08	--------	6.27	--------	24 00	Pure wheat shorts, -------	As certified, -----------	4446
3.90	--------	2.62	--------	29 00	Pure wheat middlings, ---	As certified, -----------	4447
4.38	--------	3.20	--------	1 60	Pure wheat middlings, ---	As certified, -----------	4406
5.50	--------	4.55	--------	1 50	Fresh ground middlings,--	As certified, -----------	4096
3.68	3.50-5	2.32	--------	33 00	Pure winter wheat product.	As certified, -----------	3788
6.00	3.50-5	4.40	--------	31 00	Pure winter wheat product.	As certified, -----------	4354
3.83	--------	2.65	--------	1 65	Wheat middlings, --------	As certified, -----------	4559
6.00	5.00	4.87	--------	30 00	----------------------------	Wheat middlings, -----	387
6.18	5.00	5.04	--------	1 65	----------------------------	Wheat middlings, -----	[illegible]
5.08	4.30	5.35	6.00	1 60	Made from pure wheat, --	As certified, -----------	4158
6.10	4.75	8.18	6.36	1 50	Pure wheat product, -----	As certified, -----------	5195
5.20	5.00	4.93	5.04	1 60	Pure eagle flour middlings,	As certified, -----------	5196
4.70	--------	3.30	--------	1 60	Wheat middlings, --------	As certified, -----------	4673
4.65	--------	4.10	--------	29 00	Wheat middlings, --------	As certified, -----------	4463
4.40	--------	3.16	--------	1 60	Pure wheat middlings, ---	As certified, -----------	4069
5.10	4.00	5.90	--------	1 75	Pure winter wheat middlings.	As certified, -----------	4349
3.78	--------	3.02	--------	1 70	Wheat middlings, --------	As certified, -----------	4685
6.60	4.00	8.25	8.00	1 50	Pure spring wheat standard middlings.	As certified, -----------	4324

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
3723	Elmco Standard, Listman Mill Co., La Crosse, Wis.	Indiana, James St. Clair, ..	28	11.10	18.63	17.45
4602	...... H. H. Lysinger, Bedford, Pa.	Bedford, H. H. Lysinger, ..	902	11.40	17.44	....
4290	...... Manbeck & Nelson, Mifflin, Pa.	Mifflin, Manbeck & Nelson, .	590	10.88	15.25	....
3806	...... C. P. Matthews & Sons, Inc., Monroeton, Pa.	Monroeton, C. P. Matthews & Sons, Inc.	106	11.86	14.25	....
4872	Pure Standard Brown, C. P. Matthews & Sons, Inc., Monroeton, Pa.	Wilkes-Barre, C. P. Matthews & Sons, Inc.	1172	9.81	18.31	14-16
5192	...... J. & C. M'Cune, Pittsburg, Pa.	Braddock, George Moore, ..	1492	10.62	15.94	....
4926	...... Miner-Hillard Milling Co., Wilkes-Barre, Pa.	Scranton, Miner-Hillard Milling Co.	1226	8.95	16.44	....
4162	Pure, Mountain City Mills, Frederick, Md.	Columbia, P. G. Brenneman.	462	9.95	18.88	....
4206	...... The National Milling Co., Toledo, Ohio.	York, Mitzel & Sloat, ...	506	9.53	17.56	....
4433	Seal of Minnesota Standard, New Prague Flouring Mill Co., New Prague, Minn.	Harrisburg, Mock & Hartman.	733	9.44	19.13	17.00
4068	Seal of Minnesota Standard, New Prague Flouring Mill Co., New Prague, Minn.	Altoona, R. F. Notley, ...	968	10.13	18.69	17.00
4397	Northland, Northland Milling Co., Larimore, N. Dakota.	Newville, H. Manning & Son.	697	10.45	17.38	14.67
4782	Pure, The Northwestern Consolidated Milling Co., Minneapolis, Minn.	Milton, E. Datesman, ...	1082	8.85	16.19	15.00
3940	...... The Northwestern Consolidated Milling Co., Minneapolis, Minn.	Bradford, C. L. Douglass, .	240	9.83	16.38	15.75
3931	...... The Northwestern, Consolidated Milling Co., Minneapolis, Minn.	Bradford, L. A. Fischer & Co.	231	10.10	16.75	15.75
3782	...... The Northwestern Consolidated Milling Co., Minneapolis, Minn.	Susquehanna, A. L. Langford.	82	9.75	19.00	16.25
3887	Flour, The Northwestern Consolidated Milling Co., Minneapolis, Minn.	Port Allegany, Port Allegany Milling Co.	187	11.32	18.56	16.25
5132	Pure, The Northwestern Consolidated Milling Co., Minneapolis, Minn.	Somerset, Saylor & Woy, ..	1432	9.45	15.56	15.00
3755	...... The Northwestern Elevator and Mill Co., Toledo, Ohio.	Johnstown, G. Bostert & Son.	55	10.50	17.44	15-17
4366	Orleans Flour, Northwestern Feed Co., Minneapolis, Minn.	Waynesboro, J. M. Newcomer & Co.	666	12.24	18.25	14.00
4253	...... Pennock & Brosius, Avondale, Pa.	Downingtown, E. Vinton Philips.	553	11.07	15.00	....
4798	Pure, S. F. Phillips & Son, Milton, Pa.	Milton, S. F. Phillips & Son.	1093	10.58	16.50	....
4441	...... Pillsbury Flour Mills, Minneapolis, Minn.	Middletown, S. J. Baer, ...	741	9.81	17.50	15.00
4085	...... Pillsbury Flour Mills, Minneapolis, Minn.	Kittanning, J. A. Gault & Co.	385	9.58	17.25	15.00
3985	...... Pillsbury Flour Mills, Minneapolis, Minn.	Irwin, Taylor Kunkle, ...	285	11.06	17.06	15.00
4404	B, Pillsbury Flour Mills, Minneapolis, Minn.	Carlisle, Paxton Flour and Feed Co.	704	9.17	15.31	13.00
3801	B, Pillsbury Flour Mills, Minneapolis, Minn.	Ulster, P. C. Pierce, ...	101	9.02	18.56	15.00

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
5.85	5.66	6.55	7.27	$1 60	Pure and unadulterated wheat middlings.	As certified, ...	3723
4.75	....	8.70	....	1 60	Wheat middlings, ...	As certified, ...	4602
3.25	....	2.55	....	1 55	Wheat middlings, ...	As certified, ...	4290
4.15	....	4.57	....	1 55	Wheat middlings, ...	As certified, ...	3806
5.35	4–5	7.32	8–9	1 45	Pure standard brown middlings.	As certified, ...	4872
5.65	....	7.67	....	1 80	Wheat middlings.	As certified, ...	5192
4.63	....	5.52	....	30 00	Pure wheat middlings,....	As certified, ...	4926
6.10	....	5.55	....	30 00	Pure wheat middlings,...	As certified, ...	4162
6.65	....	6.50	....	28 00	Pure wheat middlings,...	As certified, ...	4206
6.75	5.07	6.76	6.05	25 00	Pure and unadulterated wheat middlings.	As certified, ...	4433
6.45	5.07	6.57	8.05	1 60	Pure and unadulterated middlings.	As certified, ...	4668
5.53	4.21	4.77	9.35	27 00	Unadulterated wheat middlings.	As certified, ...	4397
6.05	4.50	10.80	10 00	1 50	Pure wheat middlings, ---	Wheat middlings and a considerable proportion of weed seeds.	4782
5.85	5.25	10.85	10.00	29 00	Pure wheat middlings, ---	As certified, ...	3940
6.40	5.25	9.57	10.00	28 00	Pure wheat middlings, ---	As certified, ...	3931
6.18	5.25	5.87	5.50	1 60	Pure wheat flour middlings.	As certified, ...	8782
5.75	5.25	4.73	5.50	1 65	Pure wheat middlings, ---	As certified, ...	3887
5.80	4.50	10.35	10.00	1 50	Pure wheat middlings, ---	As certified, ...	5132
4.95	4–6	6.37	5–6	30 00	Pure wheat product, ...	As certified, ...	3755
4.65	3.00	4.30	9.00	1 50	Pure wheat product, ...	As certified, ...	4366
4.88	....	3.82	....	33 00	Pure wheat middlings, ---	As certified, ...	4253
4.40	....	4.15	....	1 50	Wheat middlings, ...	As certified, ...	4793
5.70	4.50	8.60	8.00	25 00	Pure and unadulterated wheat middlings.	As certified, ...	4441
6.28	4.50	9.18	8.00	1 40	Pure and unadulterated wheat middlings.	As certified, ...	4085
5.58	4.50	8.75	8.00	1 45	Pure and unadulterated wheat middlings.	As certified, ...	3985
5.58	4.50	11.27	9.00	1 30	Pure and unadulterated wheat.	As certified, ...	4404
5.88	4.50	7.96	8.00	1 45	Pure and unadulterated wheat middlings.	As certified, ...	3801

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
4686	...... Pillsbury Flour Mills, Minneapolis, Minn.	Hollidaysburg, Thermic Coal and Supply Co.	986	10.56	18.00	15.00
4603	Pure, The Piqua Milling Co., Piqua, Ohio.	Wilkinsburg, Johnston & Smith.	903	9.55	17.63	16.00
5184	Pure, The Piqua Milling Co., Piqua, Ohio.	Wilmerding, Routh & Co.,.	1484	10.77	17.25	16.00
4961	"P," George P. Plant Milling Co., St. Louis, Mo.	Butler, B. F. Shannon & Co.	1261	9.86	17.75	17.11
3709	Napoleon Standard, Prudential Milling Co., Minneapolis, Minn.	Saltsburg, G. W. Martin & Co.	9	10.43	19.57	15.00
4818	Napoleon Standard, Prudential Milling Co., Minneapolis, Minn.	Selinsgrove, George C. Wagonseller & Son.	1118	9.41	17.06	15.00
4110	...... George W. Pusey, Ashland, Del.	Lancaster, Nein & Fisher,.	410	11.42	16.25	....
4212	Bixota Flour, Red Wing Milling Co., Red Wing, Minn.	York, Jacob Eyster, ...	512	10.13	19.25	16.00
4399	Bixota Flour, Red Wing, Milling Co., Red Wing, Minn.	Newville, S. E. Shenk, ...	699	10.39	19.06	18.00
4234	...... The Reindollar Co., Taneytown, Md.	Hanover, George Hull & Sons.	534	10.83	15.50	....
4561	...... The Saeger Milling Co., Allentown, Pa.	Allentown, The Saeger Milling Co.	861	10.48	15.31	....
4140	...... S. F. Scattergood & Co., Philadelphia, Pa.	Lititz, Elmer Eby, ...	440	10.59	18.88	....
3754	...... Scott Logan Milling Co., Sheldon, Ia.	Johnstown, G. Bostert & Son.	54	11.62	18.25	14.00
3742	...... Scott Logan Milling Co., Sheldon, Ia.	Johnstown, J. Thomas & Sons.	42	10.45	18.50	14.00
4858	...... The Security Flour Mills Co., Abilene, Kansas.	Berwick, H. L. Garrison & Bro.	1158	8.06	17.94	....
4654	White, Sheffield-King Milling Co., Minneapolis, Minn.	Altoona, E. D. Clark,......	954	9.39	17.69	17.13
4481	White, Sheffield-King Milling Co., Minneapolis, Minn.	Myerstown, Z. T. Gingrich.	781	9.89	17.81	17.13
4214	White, Sheffield-King Milling Co., Minneapolis, Minn.	York, A. F. Gross & Son,..	514	9.61	17.69	17.13
4649	White, Sheffield-King Milling Co., Minneapolis, Minn.	Altoona, Klepser Bros., ...	949	9.10	17.75	17.13
4540	Pure, H. S. Shelly, Allentown, Pa.	Allentown, Frank J. Erdman.	840	9.80	16.94	....
3947	Fancy, The Southwestern Milling Co., Kansas City, Mo.	Warren, T. N. Dunham,...	247	11.45	19.06	14.50
3918	Fancy, The Southwestern Milling Co., Kansas City, Mo.	Kane, J. A. Stoll & Co.,..	218	10.30	18.69	14.50
4575	Pure, Spanogle-Yeager Milling Co., Lewistown, Pa.	Mapleton, I. W. Fleck,....	875	11.62	17.81	12-16
4640	......Star and Crescent Milling Co., Chicago, Ill.	Altoona, Central Feed Co.	940	9.17	18.63	16.00
4733	Star, Star and Crescent milling Co., Chicago, Ill.	Du Bois, Timlin & Reshel,.	1033	10.25	17.69	16.00
4020	...... W. H. Stokes Milling Co., Watertown, S. Dak.	Uniontown, Hogsett & Hankins.	320	9.77	18.50	16.50
3976	...... W. H. Stokes Milling Co., Watertown, S. Dak.	Greensburg, McFarland Supply Co.	276	10.30	19.00	16.50
4803	...... W. H. Stokes Milling Co., Watertown, S. Dak.	Lewisburg, Wolfe & Shultz,	1103	9.68	17.88	16.50
4466	...... C. F. & W. H. Strickler Milling Co., Lebanon, Pa.	Lebanon, C. F. & W. H. Strickler.	766	11.55	17.19	....
3746	...... Swope Bros., Johnstown, Pa.	Johnstown, Swope Bros.,.	46	10.85	16.69	....

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
5.03	4.00	5.35	6.00	$1 60	Pure wheat middlings, --	As certified, ----------	4686
4.83	4.00	5.95	--------	31 00	Pure wheat middlings, --	As certified, ----------	4603
4.40	4.00	4.85	--------	1 65	Pure wheat middlings, --	As certified, ----------	5184
5.08	4.41	4.95	5.18	30 00	Pure wheat middlings, ---	As certified, ----------	4961
6.38	4.00	7.17	9.00	27 00	Pure wheat middlings, ---	As certified, ----------	3709
5.35	4.00	7.95	8.00	1 60	Pure hard wheat middlings.	As certified, ----------	4818
4.95	--------	4.47	--------	1 60	--------------------------	Wheat middlings, ----	4110
6.10	5.00	6.04	4.90	1.55	--------------------------	Wheat middlings, -----	4212
6.08	5.00	5.87	4.90	30 00	--------------------------	Wheat middlings, -----	4399
4.38	--------	4.00	--------	31 00	--------------------------	Wheat middlings, -----	4234
4.70	--------	4.40	--------	1 50	Wheat middlings, --------	As certified, ----------	4561
4.63	--------	4.39	--------	30 00	Pure wheat middlings, ---	As certified, ----------	4140
4.90	4.00	5.55	6.00	30 00	--------------------------	Wheat middlings, -----	3754
5.00	4.00	6.10	6.00	1.70	--------------------------	Wheat middlings, -----	3742
5.25	--------	5.35	--------	28 00	--------------------------	Wheat middlings, -----	4858
5.55	5.51	6.57	--------	31 00	Pure wheat middlings, ---	As certified, ----------	4654
5.85	5.61	6.45	--------	1 45	Pure wheat fancy white middlings.	As certified, ----------	4481
5.90	5.61	6.15	--------	1 55	Pure wheat middlings, ---	As certified, ----------	4214
5.65	5.51	6.56	--------	32 00	Pure wheat middlings, ---	As certified, ----------	4649
4.98	--------	5.37	--------	1 50	Pure wheat middlings, ---	As certified, ----------	4540
5.30	5.00	4.00	4.50	30 00	--------------------------	Wheat middlings, -----	3947
5.85	5.00	4.25	4.50	34 00	--------------------------	Wheat middlings, ----	3918
4.78	3-6	4.60	--------	1 65	Fresh ground pure wheat middlings.	As certified, ----------	4575
5.80	4.00	8.57	8.00	1 50	Pure wheat middlings, ----	As certified, ----------	4640
5.75	4.00	7.82	8.00	1 45	Pure wheat middlings, ----	As certified, ----------	4733
5.80	5.00	6.55	--------	30 00	Pure wheat shorts, -------	As certified, ----------	4020
6.08	5.00	6.68	--------	29 00	Pure wheat shorts, -------	As certified, ----------	3976
6.10	5.00	6.40	5.59	28 00	Pure wheat shorts, -------	As certified, ----------	4808
5.10	--------	5.57	--------	29 00	Wheat middlings, --------	As certified, ----------	4466
4.88	--------	4.50	--------	33 00	Wheat middlings, --------	As certified, ----------	3746

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
3735	...... Thornton & Chester Milling Co., Buffalo, N. Y.	Hastings, Hastings Mill,..	35	12.71	16.81	14–18
3798	Tioga White, Tioga Mill and Elevator Co., Waverly, N. Y.	Ulster, P. C. Pierce, ...	98	11.06	15.19	16.00
5030	No. 1, White, The Toledo Grain and Milling Co., Toledo, Ohio.	Tionesta, G. W. Robinson & Son.	1330	10.73	16.31	....
3957	No. 1, White, The Toledo Grain and Milling Co., Toledo, Ohio.	Ridgway, Smith Bros., Co.	257	11.61	15.94	....
4690	...... Tyrone Milling Co., Tyrone, Pa.	Tyrone, Tyrone Milling Co.	990	10.09	17.31	....
5092	Pure, C. W. Wager & Co., Philadelphia, Pa.	Pottstown, W. H. Moser,..	1392	11.30	16.81	....
4756	Hard Wheat Standard, Washburn-Crosby Co., Mineapolis, Minn.	Sunbury, Blank & Gutshall.	1056	9.97	17.33	15.00
4578	Standard, Washburn-Crosby Co., Minneapolis, Minn.	Mapleton Depot; I. W. Fleck.	878	9.91	18.56	15.00
4801	Standard, Washburn-Crosby Co., Minneapolis, Minn.	Lewisburg, Gonsor & Noll,	1101	8.61	15.44	15.00
4585	Flour, Washburn-Crosby Co., Minneapolis, Minn.	Mt. Union, David Rummel,	885	9.91	19.50	17.60
4586	Flour Washburn-Crosby Co., Minneapolis, Minn.	Mt. Union, David Rummel,	886	9.70	18.19	15.00
4768	Flour, Washburn-Crosby Co., Minneapolis, Minn.	Shamokin, Shamokin Milling Co.	1068	9.36	18.00	15.00
4570	...... Washburn-Crosby Co., Minneapolis, Minn.	Huntingdon, Stouffer & Brenneman.	870	11.15	19.38	17.00
4386	Standard, Washburn-Crosby Co., Minneapolis, Minn.	Shippensburg, John P. Wadel.	686	10.84	19.38	15.00
4302	Flour, Washburn-Crosby Co., Minneapolis, Minn.	Waynesboro, West & West,	662	10.36	20.00	17.00
5129	U Knead It, Watson Mill Co., Wichita, Kansas.	Somerset, H. C. Berits & Sons.	1429	10.66	18.13	15.10
5152	...... Waynesburg Milling Co., Waynesburg, Pa.	Waynesburg, Waynesburg Milling Co.	1452	11.93	16.81	....
4621	W. W., J. H. & S. E. Weber, Centre Hall, Pa.	Altoona, Martin & Co.,....	921	11.23	15.44	14–17
4097	Pure, Wells-Abbott-Nieman Co., Schuyler, Neb.	New Brighton, J. H. Hornby & Sons.	897	10.72	18.06	15–18
4841	Feedwell, Mixed, Wells Flour Milling Co., Wells, Minn.	Bloomsburg, Bloomsburg Roller Mills.	1141	9.08	18.69	14.81
4842	Feedwell Wheat Flour, Wells Flour Milling Co., Wells, Minn.	Bloomsburg, Bloomsburg Roller Mills.	1142	9.88	17.88	17.50
4491	Pure, George W. Wertz, Wernersville, Pa.	Reading, George W. Wertz,	791	9.41	18.25	....
4490	...... Wertz Milling Co., Reading, Pa.	Reading, Wertz Milling Co.	790	10.74	15.25	....
3720	Black Hawk Flour, Western Flour Mill Co., Davenport, Iowa.	Homer City, A. George & Son.	20	11.26	17.44	16.00
4229	Black Hawk Standard, Western Flour Mills Co., Davenport, Iowa.	Hanover, Hanover Feed and Coal Co.	529	9.92	19.06	14.02
4505	Black Hawk, Western Flour Mill Co., Davenport, Iowa.	Reading, Reading Grain Co.	805	9.25	17.88	16.00
4018	Star Winter, The Western Star Mill Co., Salina, Kansas.	Scottdale, J. E. Pritts, ..	813	10.89	20.19	16–18
4846	...... The White Milling Co., Bloomsburg, Pa.	Bloomsburg, The White Milling Co.	1146	9.69	17.44	....

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
4.58	3-5	3.67	....	$1 55	Pure wheat product, ...	As certified, ...	3785
4.90	4.00	5.67	8.00	1 70	Pure wheat middlings, ---	As certified, ...	3798
4.40	....	2.95	....	1 85	Pure and unadulterated wheat middlings.	As certified, ...	5030
4.20	....	2.89	....	2 00	Pure and unadulterated wheat middlings.	As certified, ...	3957
4.95	....	4.60	....	30 00	Wheat middlings, ...	As certified, ...	4690
4.88	....	8.47	....	1.60	Wheat middlings, ...	As certified, ...	5092
5.68	4.00	7.27	8.00	1 85	Pure wheat middlings, ---	As certified, ...	4758
5.75	4.00	7.70	8 00	1 50	Pure hard wheat standard middlings..	As certified, ...	4578
5 80	4.00	7.37	8.00	1 40	Hard wheat middlings,---	As certified, ...	4801
6.68	5.00	6.00	6.00	1 60	Wheat flour middlings, --	As certified, ...	4585
6.10	4.00	8.80	8.00	1 40	Pure hard wheat standard middlings.	As certified, ...	4586
5.70	4.00	7.80	8.00	28 00	Unadulterated wheat middlings.	As certified, ...	4768
6 18	5.00	5.75	6.00	29 00	Pure hard wheat flour middlings.	As certified, ...	4570
5 75	4.00	6.32	8.00	1.45	Pure hard wheat standard middlings.	As certified, ...	4386
6 40	5.00	6.10	6.00	32 00	Pure hard wheat flour middlings.	As certified, ...	4362
4.03	2.85	2.67	5.06	1 75	Wheat middlings, ...	As certified, ...	5129
4 50	......	3.85	....	31 00	Wheat middlings, ...	As certified, ...	5152
3.68	3.50-4.50	3.25	....	36 00	Winter wheat middlings,--	As certified, ...	4621
5.40	4-6	4.32	5-6.50	1 45	Pure wheat shorts, ...	As certified, ...	4097
5 68	5.54	5.90	6.12	30 00	Pure and unadulterated mixed wheat middlings.	As certified, ...	4841
5.88	4.70	4.05	4.70	30 00	Pure and unadulterated wheat flour middlings.	As certified, ...	4842
6 58	....	3.90	....	1 60	Pure wheat middlings,----	As certified, ...	4491
8.18	....	2.57	....	30 00	Wheat middlings, ...	As certified, ...	4490
5 00	4.50	4.20	5.75	32 00	Purity guaranteed, ...	As certified, ...	3720
6.85	4.02	5.62	8.00	30 00	....	Wheat middlings, ...	4229
6.68	4.75	6.57	7.25	28 00	Standard wheat middlings.	As certified, ...	4505
4.56	3-5	4.72	....	30 00	Wheat middlings, ...	As certified, ...	4013
5.85	....	4.82	....	30 00	Wheat middlings, ...	As certified, ...	4846

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
4510	------ A. Yocom's Sons Co., Reading, Pa.	Reading, A. Yocoms' Sons Co.	810	10.43	16.81	-------
4513	------ A. Yocom's Sons Co., Reading, Pa.	Reading, A. Yocoms' Sons Co.	813	11.27	14.63	-------
4813	------ J. F. Youngman, Selinsgrove, Pa.	Selinsgrove, J. F. Youngman.	1113	4.07	15.63	-------
4438	Unknown, ----------------	Harrisburg, Hoffer & Garman.	738	10.41	17.00	-------
3936	Unknown, ----------------	Bradford, Smith Bros., ---	236	11.17	14.88	-------
		Average, ----------------	-------	10.26	17.35	-------
	Wheat Middlings with Admixtures.					
4662	Gem, T. M. Biddle, Altoona, Pa.	Altoona, T. M. Biddle, --	962	9.81	14.69	10.10
3773	Stone Mill, George H. Gisel & Co., Buffalo, N. Y.	New Milford, H. B. Carpenter & Co.	73	7.69	11.75	10-13
4850	Colonial, Miner-Hillard Milling Co., Wilkes-Barre, Pa.	Catawissa, M. J. Crimes & Bro.	1150	8.02	13.56	12-15
4922	Colonial, Miner-Hillard Milling Co., Wilkes-Barre, Pa.	Scranton, Miner-Hillard Milling Co.	1222	9.51	11.88	12-15
		Average, ----------------	-------	8.76	12.72	-------
5168	Refuse, Standard Tin Plate Co., Canonsburg, Pa.	Canonsburg, Standard Tin Plate Co.	1468	5.89	17.75	-------
4301	No. 2 White, Toledo Grain and Milling Co., Toledo, Ohio.	Reynoldsville, Robinson & Mundorf,	601	10.77	14.50	12-14
5029	No. 2 White Middlings and Corn Meal, The Toledo Grain and Milling Co., Toledo, Ohio.	Tionesta, G. W. Robinson & Son.	1329	10.98	14.81	12.14
4742	No. 2 White Middlings and Corn Meal, The Toledo Grain and Milling Co., Toledo, Ohio.	Clearfield, Ross & Woods,	1042	9.77	15.13	12-14
4906	No. 2 White Middlings and Corn Meal, The Toledo Grain and Milling Co., Toledo, Ohio.	Butler, B. F. Shannon & Co.	1266	9.65	15.00	12-14
3704	No. 2 White Middlings and Corn Meal, The Toledo Grain and Milling Co., Toledo, Ohio.	Blairsville, Smith & McKelvey.	4	11.14	14.75	12-14
		Average, ----------------	-------	10.46	14.84	-------
	Mixed Feed—Wheat By-Products.					
4046	Acme, Acme Evans Co., Indianapolis, Ind.	Charleroi, R. C. Mountser,	346	8.81	17.19	15-17.50
3831	Hoosier, Acme Evans Co., Indianapolis, Ind.	Canton, Homer Rockwell,-	131	8.92	16.31	15-17.50
3765	Gem, Allen Baker Com. Co., St. Louis, Mo.	Montrose, Brown & Fassett.	65	9.17	16.38	14-17
3828	Gem, Allen Baker Com. Co., St. Louis, Mo.	Alba, S. S. Cosper, -------	128	9.38	16.63	14-17
3785	Apex Fancy, Allen Baker Com. Co., St. Louis, Mo.	Susquehanna, Homer E. Spencer.	85	9.26	16.75	14-17

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
5 28	....	4.75	....	$28 00	Wheat shorts, ...	As certified, ...	4510
3.15	....	1.70	....	30 00	Wheat middlings, ...	As certified, ...	4513
3.70	....	3.90	....	30 00	Wheat middlings, ...	As certified, ...	4813
4.80	....	6.77	....	25 00	Wheat shorts, ...	As certified, ...	4438
4.50	....	5.90	....	28 00	....	Wheat middlings, ...	3936
5.21	....	5.64	....	30 33			
5.10	2.10	2.40	11.30	31 00	Wheat middlings, red dog flour and hominy feed.	Wheat middlings, red dog flour, hominy feed and small amount of rye.	4662
3.25	2–4	15.54	....	1 40	Winter wheat bran, winter wheat middlings, red flour, ground corn and cob.	As certified, ...	3773
7.20	5–8	7.45	6–8	30 00	Wheat middlings and white corn middlings.	As certified, ...	4850
8.08	6–8	6.35	6–8	29 00	Wheat middlings, white corn middlings.	As certified, ...	4922
7.64	....	6.90	....	29 50			
8 50	....	7.25	....	17 50	....	Wheat middlings and palm oil.	5168
5.38	4–6	4.55	6.00	1 60	Wheat middlings and fine white corn meal.	As certified, ...	4301
4.80	4–6	5.70	6.00	1 65	Wheat middlings and fine white corn meal.	As certified, ...	5029
5.38	4–6	5.67	6.00	1 60	Wheat middlings and fine white corn meal.	As certified, ...	4742
4.80	4–6	4.97	6.00	30 00	Wheat middlings and fine white corn meal.	As certified, ...	4906
4.88	4–6	5.32	6.00	32 00	Wheat middlings and fine white corn meal.	As certified, ...	3704
5.04	....	5.24	....	31 80			
4.75	4–5	8.23	10.00	29 00	Mills run, wheat bran and wheat middlings.	As certified, ...	4046
4.75	4–5	8.63	10.00	30 00	Mills run, wheat bran and wheat middlings.	As certified, ...	3831
4.85	4–5	7.78	....	1 55	Pure wheat product, ...	As certified, ...	3765
5.06	4–5	7.65	....	28 00	Pure wheat product, ...	As certified, ...	3828
4 88	4–5	7.75	....	30 00	Pure bran and middlings,.	As certified, ...	3786

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
4728	Boston, Duluth-Superior Milling Co., Duluth, Minn.	Du Bois, A. T. Sprankle,..	1028	8.19	17.31	16.00
3777	Ilmo, Hunter-Robinson-Wenz Milling Co., St. Louis, Mo.	Great Bend, Albert Bolt,...	77	9.86	19.44	15–18
5011	Buckeye, The Quaker Oats Co., Chicago, Ill.	Titusville, L. S. Clark,......	1341	8.67	16.13	13.00
5138	Buckeye, The Quaker Oats Co., Chicago, Ill.	Washington, D. P. Hart,..	1488	10.29	16.19	13.00
4971	Buckeye, The Quaker Oats Co., Chicago, Ill.	New Castle, T. W. Hutchinson & Son.	1271	9.61	16.00	13.00
5145	Buckeye, The Quaker Oats Co., Chicago, Ill.	Washington, G. W. McBrier.	1445	9.07	16.75	13.00
4996	Buckeye, The Quaker Oats Co., Chicago, Ill.	Sharon, J. M. Porter, ...	1296	9.01	16.50	13.00
5189	Buckeye, The Quaker Oats Co., Chicago, Ill.	Pitcairn, D. F. Salyards,...	1489	9.94	16.13	13.00
5053	Buckeye, The Quaker Oats Co., Chicago, Ill.	Union City, Union Coal & Supply Co.	1353	8.75	16.13	13.00
3762	Occidental, Russell-Miller Milling Co., Minneapolis, Minn.	Montrose, Brown & Fassett.	62	10.13	18.00	15.00
3779	Occidental, Russel-Miller Milling Co., Minneapolis, Minn.	Susquehanna, A. L. Langford.	79	10.80	17.75	15.00
		Average, ...		9.36	16.85	....
	Wheat Bran.					
5049	Perfection Choice Winter, Ames-Burns Co., Jamestown, N. Y.	Corry, W. A. Dodd, ...	1349	9.55	15.88	14.00
4853	Pure, Aqueduct Mills, Bloomsburg, Pa.	Catawissa, W. A. McCloughan.	1153	8.87	15.44	14.12
4379	Atlas, Atlas Flour Mills, Milwaukee, Wis.	Chambersburg, Diehl, Omwake & Diehl.	679	9.28	15.63	15.00
3784	Atlas, Atlas Flour Mills, Milwaukee, Wis.	Susquehanna, Homer S. Spencer.	84	8.70	16.69	15.00
3995	...... The Austed & Burk Co., Springfield, O.	Jeannette, Keystone Supply Co.	295	10.74	15.94	14–15
4948	...... The Austed & Burk Co., Springfield, O.	Butler, H. J. Klingler & Co.	1248	9.65	15.56	14–15
3980	Ballard's, Ballard & Ballard Co., Louisville, Ky.	Greensburg, McFarland Supply Co.	280	10.25	16.44	14.50
4329	Ballard's, Ballard & Ballard Co., Louisville, Ky.	Newberry, J. T. Stahlnecker.	629	11.45	14.50	14.50
3886	Banner, Banner Milling Co., Buffalo, N. Y.	Port Allegany, Port Allegheny Milling Co.	186	9.71	17.00	....
4104	...... Barber Milling Co., Minneapolis, Minn.	Monaca, Monaca Roller Mills.	404	10.90	16.44	13–17
4416	Badger, Berger-Crittenden Milling Co., Milwaukee, Wis.	Mt. Holly Springs, Percy Harman.	716	8.47	13.68	15.00
4419	Badger, Berger-Crittenden Milling Co., Milwaukee, Wis.	Mt. Holly Springs, J. N. Weigel.	719	8.74	16.56	15.00
4340	Badger, Berger-Crittenden Milling Co., Milwaukee, Wis.	Lock Haven, E. E. Wentz,	640	9.74	16.38	15.00
4815	Badger, Berger-Crittenden Milling Co., Milwaukee, Wis.	Selinsgrove, J. F. Youngman.	1115	8.94	15.50	15.00
4949	Pure, Bernet, Craft & Kauffman Milling Co., St. Louis, Mo.	Butler, H. J. Klingler & Co.	1249	9.09	17.38	14.30

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
5.38	4.50	9.20	8.50	$1 50	Wheat bran, middlings, and low grade flour.	As certified, ...	4728
5.43	4-5	7.50	....	1 45	Bran and middlings, pure winter wheat product.	As certified, ...	3777
5.00	4.00	7.40	8.00	1 85	Wheat bran, wheat middlings and ground wheat.	As certified, ...	5041
5.33	4.00	7.30	8.00	27 00	Wheat bran, wheat middlings and ground wheat.	As certified, ...	5138
5.00	4.00	7.37	8.00	1 50	Wheat bran, wheat middlings and ground wheat.	As certified, ...	4971
5.13	4.00	7.70	8.00	27 00	Wheat bran, wheat middlings and ground wheat.	As certified, ...	5145
5.60	4.00	8.30	8.00	26 00	Wheat bran, wheat middlings and ground wheat.	As certified, ...	4996
5.55	4.00	7.44	8.00	1 50	Wheat bran, wheat middlings and ground wheat.	As certified, ...	5189
4 90	4.00	8.92	8.00	1 25	Wheat bran, wheat middlings and ground wheat.	As certified, ...	5058
5.65	4.50	7.97	10.00	1 55	Made from wheat only, --	As certified, ...	3762
5 63	4.50	8.24	10.00	1 55	Made from wheat only, --	As certified, ...	3779
5.18	....	7.96	....	28 81			
4.83	3.50	8.70	10.00	26 00	Pure winter wheat product.	As certified, ...	5049
3.58	3.54	7.50	6-8	1 50	Pure wheat bran, ...	As certified, ...	4858
5.30	3.80	11.47	11.00	26 00	Made from pure wheat and unadulterated.	As certified, ...	4379
5.96	3.80	10.93	11.00	28 00	....	Wheat bran, ...	3784
5.25	3-4.50	9.12	9-11.50	30 00	....	Wheat bran, ...	3996
4.63	3-4	10.00	9-11	1 35	....	Wheat bran, ...	4948
4.50	4.10	8.50	9.00	29 00	Pure wheat bran, ...	As certified, ...	3980
4.85	4.10	9.10	9.00	1 45	All wheat product, ...	As certified, ...	4329
5.90	....	10.52	....	1 50	Pure wheat, ...	As certified, ...	3886
5.60	4-6	9.06	10.00	28 00	Pure wheat bran flakes,--	As certified, ...	4104
5.08	4.00	10.30	11.00	1 30	Pure and unadulterated wheat product.	As certified, ...	4416
5.15	4.00	10.50	11.00	1 35	Pure and unadulterated wheat product.	As certified, ...	4419
4.65	4.00	10.05	11.00	27 00	Pure and unadulterated wheat product.	As certified, ...	4340
5.18	4.00	10.86	10.63	24 00	Pure and unadulterated wheat product.	As certified, ...	4815
5.00	3.55	8.56	....	1 35	Made from pure wheat,	As certified, ...	4949

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein. Found.	Crude Protein. Guaranteed.
				Per ct.	Per ct.	Per ct.
4738	...... Bernet, Craft & Kauffman Milling Co., St. Louis, Mo.	Clearfield, John W. Smith & Bro.	1038	8.65	15.56	16.25
3857	...... The Birkett Mills, Penn Yan, N. Y.	Westfield, L. Plank, ...	157	9.79	14.63	....
3952	......Blaine, Mackay, Lee Co., North East, Pa.	Youngsville, John H. Fuellhart.	252	10.04	17.06	15.40
4763	......Blank & Gottshall, Sunbury, Pa.	Sunbury, Blank & Gottshall.	1063	8.84	17.06	14–16
4838	...... Bloomsburg Roller Mills, Bloomsburg, Pa.	Bloomsburg, Bloomsburg Roller Mills.	1138	9.90	14.56	....
4807	...... Buffalo Flour Milling Co., Lewisburg, Pa.	Lewisburg, Buffalo Flour Milling Co.	1107	8.73	16.69	....
4800	...... Buffalo Flour Milling Co., Lewisburg, Pa.	Lewisburg, Gonser & Noll,	1100	8.00	15.50	....
4790	Fancy, Cannon Valley Milling Co., Minneapolis, Minn.	Milton, C. H. McMahon, ..	1090	8.58	15.88	13–17
3815	...... Cayuta Mills, Sayre, Pa.	Sayre, Cayuta Mills, ...	115	11.32	14.56	....
4657	Jersey, George C. Christian, Minneapolis, Minn.	Altoona, E. D. Clark, ...	957	8.51	15.13	13.00
4457	...... City Flouring Mills, Lebanon, Pa.	Lebanon, City Flouring Mills.	757	9.54	15.44	....
5177	Winter, City Mills, Shelby, Ohio.	Carnegie, C. A. Foster, ..	1477	10.13	15.81	15.44
5141	Winter, City Mills, Shelby, Ohio.	Washington, C. B. Ruch,	1441	9.78	16.25	15.44
4077	...... Clark Grain Co., Pittsburg, Pa.	Kittanning, William Gates Est.	377	9.24	16.44	....
4856	Claro, Claro Milling Co., Lakeville, Minn.	Berwick, H. L. Garrison & Bro.	1156	8.25	15.94	14–17
3775	Claro, Claro Milling Co., Lakeville, Minn.	New Milford, John J. Potter.	75	9.89	16.63	14–17
4878	Commander, Commander Mill Co., Minneapolis, Minn.	Wilkes-Barre, John Ahlbrandt.	1178	8.01	15.44	14.00
4535	Commander, Commander Mill Co., Minneapolis, Minn.	Allentown, George B. Shelly Est.	835	8.75	15.69	14.00
4719	Commander, Commander Mill Co., Minneapolis, Minn.	Munson Station, Jacob Smutzinger.	1019	8.78	15.69	14.00
3760	Henkels, Commercial Milling Co., Detroit, Mich.	New Milford, H. B. Carpenter & Co.	69	8.99	15.48	14.79
3951	...... The Commercial Milling Co., Cleveland, Ohio.	Youngsville, John H. Fuellhart.	251	10.60	17.06	14–17.50
3971	...... The Commercial Milling Co., Cleveland, Ohio.	Greensburg, Harry Orr & Co.	271	13.25	17.31	14–17.50
5046	...... The Commercial Milling Co., Cleveland, Ohio.	Titusville, Titusville City Mills.	1346	9.45	16.56	....
4421	...... Chas. T. Coyle, Mt. Holly Springs, Pa.	Mt Holly Springs, J. M. Weigel.	721	8.09	16.69	....
4211	Coarse, William G. Crocker, Minneapolis, Minn.	York, Jacob Eyster, ...	511	9.28	17.50	14.50
4199	Coarse, William G. Crocker, Minneapolis, Minn.	York, Miller Bros., ...	499	8.49	17.31	14.50
4252	Coarse, William G. Crocker, Minneapolis, Minn.	Downingtown, E. Vinton Philips.	552	11.40	17.25	14.50
4325	Coarse, William G. Crocker, Minneapolis, Minn.	Newberry, J. T. Stahlnecker.	625	9.27	17.50	14.50
4343	Coarse, William G. Crocker, Minneapolis, Minn.	Lock Haven, E. E. Wentz,	643	9.47	16.06	14.50
3913	...... Crosby Roller Milling Co., Topeka, Kan..	St. Marys, George Wolf,..	213	8.50	18.31	14.00
5009	...... Crouch Bros. Co., Erie, Pa.	Oil City, Clyde D. Duffee,	1309	9.09	16.81	15.00

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
4.70	3.55	9.60	....	$1 50	Wheat bran, ...	As certified, ...	4738
4.65	....	9.36	....	1 50	Pure and unadulterated wheat bran.	As certified, ...	3857
6.30	4.00	8.75	....	29.00	Pure wheat bran, ...	As certified, ...	3952
4.75	3.50-4.50	9.81	6.50-7.50	1 25	Wheat bran, ...	As certified, ...	4763
4.70	....	10.67	....	27 00	Wheat bran, ...	As certified, ...	4838
4.60	....	10.42	....	25 00	Wheat bran, ...	As certified, ...	4807
4.78	....	9.75	....	1 35	Wheat bran, ...	As certified, ...	4800
5.30	4-6	9.25	10.00	1 40	Pure wheat bran, ...	As certified, ...	4790
3.85	....	7.00	....	30 00	....	Wheat bran, ...	3815
5.38	4.00	5.77	11.50	27 00	Pure wheat bran, ...	As certified, ...	4657
5.15	....	9.30	....	26 00	Wheat bran, ...	As certified, ...	4457
4.25	3.78	8.37	11.57	25 00	Winter wheat bran, ...	As certified, ...	5177
4.28	3.78	8.40	11.57	1 40	Wheat bran, ...	As certified, ...	5141
4.88	....	9.70	....	28 00	....	Wheat bran, ...	4077
5.30	3-6	10.35	9-11	26 00	....	Wheat bran, ...	4856
5.73	3-5	9.52	....	1 40	....	Wheat bran, ...	3775
5.25	4.00	11.10	10.00	28 00	Pure wheat bran, ...	As certified, ...	4878
5.53	4.00	10.75	10.00	27 00	Unadulterated pure wheat bran.	As certified, ...	4535
5.50	4.00	11.12	10.00	29 00	Pure wheat bran, ...	As certified, ...	4719
5.60	3.30	10.10	....	1 40	....	Wheat bran, ...	3760
6.03	4.50-5.50	9.00	....	20 00	Pure wheat and screenings.	Wheat bran, ...	3951
5.65	4.50-5.50	9.83	....	28 00	Pure wheat and screenings.	Wheat bran, ...	3971
5.20	....	9.55	....	25 00	Natural run of wheat, ..	As certified, ...	5046
5.15	....	9.52	....	1 40	Wheat bran, ...	As certified, ...	4421
6.13	4.00	11.12	11.00	1 40	Pure hard wheat bran, ..	As certified, ...	4211
6.43	4.00	10.57	11.00	1 45	Unadulterated wheat bran.	As certified, ...	4199
5.75	4.00	9.50	11.00	27 00	Pure hard wheat bran, ..	As certified, ...	4252
6.00	4.00	9.77	11.00	1 35	Pure hard wheat bran, ..	As certified, ...	4325
5.28	4.00	9.90	11.00	27 00	Pure hard wheat bran, ..	As certified, ...	4343
4.75	3.00	9.43	10.00	29 00	Pure winter wheat bran,	As certified, ...	3913
4.75	4.50	8.97	9.50	27 00	....	Wheat bran, ...	5009

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
3798	...... Dayton Milling Co., Towanda, Pa.	Towanda, Dayton Milling Co.	93	10.29	15.06	....
4316	...... Dayton Milling Co., Towanda, Pa.	Williamsport, Gohl & King,	616	9.43	17.38	....
3929	...... The Davis Milling Co., St. Joseph, Mo.	Bradford, L. A. Fisher & Co.	229	9.95	17.31	13.00
5045	...... The Davis Milling Co., St. Joseph, Mo.	Titusville, Titusville City Mills.	1345	8.84	16.94	13.00
4311	Duluth Imperial, Duluth-Superior Milling Co., Duluth, Minn.	Williamsport, F. W. Dawson & Son.	611	8.32	16.81	14.50
4617	Duluth Imperial, Duluth-Superior Milling Co., Duluth, Minn.	Altoona, J. B. Forsht, ---	917	8.69	16.81	14.50
4146	Duluth Imperial, Duluth-Superior Milling Co., Duluth, Minn.	Leaman Place, Harry K. Hershey.	446	8.71	16.90	14.50
4771	Imperial, Duluth-Superior Milling Co., Duluth, Minn.	Shamokin, J. R. Vought,--	1071	8.27	17.81	14.50
4512	Duluth Imperial, Duluth-Superior Milling Co., Duluth, Minn.	Reading, A. Yocum's Sons & Co.	812	9.38	15.56	14.50
4863	...... Duncannon Flouring Mill Co., Duncannon, Pa.	Duncannon Flouring Mill Co., Duncannon, Pa.	1168	9.85	14.88	....
4272	Pure. Ezl. Dunwoody Co., Philadelphia, Pa.	West Chester, C. C. Hipple & Son.	572	10.94	15.68	....
4633	...... Eagle Roller Mill Co., New Ulm, Minn.	Altoona, Altoona Grain & Feed Co.	938	8.36	15.88	14.90
4600	...... Eagle Roller Mill Co., New Ulm, Minn.	Bedford, H. H. Lysinger,	900	10.41	15.69	14.90
3990	...... Eckhart & Swan Milling Co., Chicago, Ill.	Irwin, Irwin Flour Mills Co.	290	9.26	16.81	....
4277	...... Elder & Eckbert, Lewistown, Pa.	Lewistown, Elder & Eckbert.	577	9.30	17.19	....
4278	...... Elder & Eckbert, Lewistown, Pa.	Lewistown, Elder & Eckbert.	578	9.07	17.25	....
3862	...... Elkland Roller Mills, Elkland, Pa.	Elkland, Elkland Roller Mills.	162	9.60	17.19	....
5037	...... Emlenton Milling Co., Ltd., Emlenton, Pa.	Emlenton, Emlenton Milling Co., Ltd.	1337	11.25	16.44	....
3896	...... Emporium Milling Co., Emporium, Pa.	Emporium, Emporium Milling Co.	196	9.48	16.69	14.00
3877	...... Eulalia Milling Co., Coudersport, Pa.	Coudersport, Eulalia Milling Co.	177	8.15	15.75	....
4661	Eaco Winged Horse, Everett, Aughenbaugh & Co., Waseca, Minn.	Altoona, T. M. Biddle, ---	961	8.10	16.19	14–17
3790	Eaco Winged Horse, Everett, Aughenbaugh & Co., Waseca, Minn.	Lanesboro, Buckley Bros.,	90	9.24	16.31	14–17
4796	...... H. L. Follmer, Watsontown, Pa.	Watsontown, H. L. Follmer.	1096	9.92	17.19	....
5083	...... Franke Grain Co., Milwaukee, Wis.	Franklin, Johnson & Co.,	1338	10.01	15.88	....
4539	...... D. D. & N. D. Fritch, Macungie, Pa.	Allentown, H. F. Gruver,--	839	9.18	15.19	....
3902	...... Gamble, Gheen & Co., Bellefonte, Pa.	Emporium, E. J. Smith, --	202	10.81	16.00	....
4650	Clover Leaf, The Gardner Mill, Hastings, Minn.	Altoona, Klepser Bros., --	950	7.61	15.94	13.50
4743	Clover Leaf, The Gardner Mill, Hastings, Minn.	Clearfield, Ross & Woods,	1043	10.37	15.94	13.50
4508	Clover Leaf, The Gardner Mill, Hastings, Minn.	Reading, W. T. Snyder, --	908	10.64	15.56	13.50
4283	Clover Leaf, The Gardner Mill, Hastings, Minn.	Lewistown, G. M. White,	583	12.30	15.61	13.50
4702	Coarse, Globe Elevator Co., Buffalo, N. Y.	Philipsburg, Feed Grain Co.	1002	8.87	16.50	12–14

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
4.85	....	9.04	....	$30 00	....	Wheat bran, ...	3798
5.73	....	10.15	....	1 50	....	Wheat bran, ...	4316
4.80	4.00	8.13	9.00	29 00	Pure wheat bran, ...	As certified, ...	3929
4.18	4.00	8.90	9.00	25 00	Pure wheat bran, ...	As certified, ...	5045
5.60	4.00	12.07	11.25	1 35	Pure wheat bran, ...	As certified, ...	4311
5.38	4.60	10.95	11.25	26 00	Wheat bran, ...	As certified, ...	4617
6.58	4.90	11.10	11.25	27 00	Wheat bran, ...	As certified, ...	4146
5.88	4.00	11.67	11.25	1 40	Wheat bran, ...	As certified, ...	4771
5.43	4.60	10.92	11.25	25 00	Pure bran, ...	As certified, ...	4512
4.30	....	9.25	....	29 00	Wheat bran, ...	As certified, ...	4868
5.35	....	10.05	....	27 00	Pure wheat bran, ...	As certified, ...	4272
5.33	4.10	10.23	9.22	1 20	Pure wheat bran, ...	As certified, ...	4638
5.73	4.10	10.60	9.22	1 30	Pure wheat bran, ...	As certified, ...	4600
5.35	....	9.90	....	29 00	Pure wheat bran, ...	As certified, ...	3990
4.90	....	9.17	....	1 50	Wheat bran, ...	As certified, ...	4277
4.30	....	5.77	....	1 55	Bran and shorts or middlings.	As certified, ...	4278
5.40	....	9.97	....	28 00	Pure wheat bran, ...	As certified, ...	3862
5.43	....	9.70	....	27 00	Pure and unadulterated wheat bran.	As certified, ...	5037
5.13	3.00	8.60	....	30 00	Pure wheat bran, ...	As certified, ...	3896
5.15	....	10.77	....	30 00	Wheat bran, ...	As certified, ...	3877
5.60	3-6	11.62	8-11	25 50	....	Wheat bran, ...	4661
5.75	3-6	10.33	8-10	1 45	....	Wheat bran, ...	3790
3.93	....	8.42	....	1 35	Wheat bran, ...	As certified, ...	4796
5.18	....	10.02	....	25 00	....	Wheat bran, ...	5033
4.88	....	9.25	....	1 30	Wheat bran, ...	As certified, ...	4539
4.43	....	7.95	....	1 55	Pure wheat bran, ...	As certified, ...	3902
5.40	4.50	6.60	....	28 00	Wheat bran, ...	As certified, ...	4650
5.05	4.50	10.52	....	1 50	Wheat bran, ...	As certified, ...	4743
4.85	4.50	9.70	....	1 30	Wheat bran, ...	As certified, ...	4508
5.28	4.50	10.05	....	1 50	Wheat bran, ...	As certified, ...	4283
4.65	3-4	8.87	10-11	1 60	Coarse wheat bran, ...	As certified, ...	4702

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
4604	Pure, The Gwinn Milling Co., Columbus, Ohio.	Wilkinsburg, Johnston & Smith.	904	9.10	16.68	15.75
4679	...... Hagey Bros., Martinsburg, Pa.	Martinsburg, Hagey Bros.,	979	8.61	16.56	--------
4940	...... Haney-Frazier Milling Co., Danville, Pa.	Scranton, George H. Easterle.	1240	8.87	17.38	--------
4829	...... Haney-Frazier Milling Co., Danville, Pa.	Danville, Haney - Frazier Milling Co.	1129	10.59	16.69	--------
3988	...... Hardman & Heck, Pittsburg, Pa.	Irwin, Taylor Kunkle, ----	288	9.59	16.88	14–17
3962	...... Hardman & Heck, Pittsburg, Pa.	Derry, J. O. Nicely, -------	262	10.08	16.69	14–17
4982	...... Harmony Cereal Co., Harmony, Pa.	Harmony, Harmony Cereal Co.	1282	9.80	15.81	--------
4865	...... John Hoffer Flouring Mill Co., Steelton, Pa.	Duncannon, Duncannon Flouring Mill Co.	1165	10.51	15.44	--------
4445	...... John Hoffer Flouring Mill Co., Steelton, Pa.	Steelton, John Hoffer Flouring Mill Co.	745	8.93	15.56	--------
4407	Pure, John Hoffer Flouring Mill Co., Steelton, Pa.	Carlisle, Paxton Flour & Feed Co.	707	8.18	15.81	--------
4476	Pure Flaky, Hubbard Milling Co., Mankatoo, Minn.	Myerstown, E. L. Bleistein.	776	9.40	16.19	15.00
4413	Pure Flaky, Hubbard Milling Co., Mankatoo, Minn.	Carlisle, S. B. Jackson, --	713	9.00	16.56	15.00
4564	Flaky, Hubbard Milling Co., Mankatoo, Minn.	Allentown, John E. Schnon,	864	8.14	16.31	13.20
4220	Flaky, Hubbard Milling Co., Mankatoo, Minn.	York, H. H. Smyser, ------	520	10.48	16.19	15.00
3898	...... The Hunter Bros. Milling Co., St. Louis, Mo.	Emporium, Emporium Milling Co.	198	10.61	16.69	14.00
3955	...... The Hunter Bros. Milling Co., St. Louis, Mo.	Warren, Warren Mills Co.,	255	9.52	15.63	14.00
3943	Repeater Winter, Hunter-Robinson-Wenz Milling Co., St. Louis, Mo.	Warren, T. N. Dunham, --	243	11.78	18.75	14.50
5026	Dreadnought Coarse, Hunter-Robinson-Wenz Milling Co., St. Louis, Mo.	Tionesta, Lanson Bros., --	1326	10.13	15.94	14.50
4712	Repeater Winter, Hunter-Robinson-Wenz Milling Co., St. Louis, Mo.	Philipsburg, Philipsburg Milling, Lighting and Heating Co.	1012	9.72	15.81	14.50
4597	Winter, Hunter-Robinson-Wenz Milling Co., St. Louis, Mo.	Bedford, D. W. Prosser,--	897	9.16	16.25	14.50
3910	...... Hunter-Robinson-Wenz Milling Co., St. Louis, Mo.	St. Marys, L. Ritter, ----	210	10.95	17.06	--------
4567	...... Huntingdon Milling Co., Huntingdon, Pa.	Huntingdon, Huntingdon Milling Co.	867	9.17	17.44	--------
3870	Spring, Jennison Bros. & Co., Janesville, Minn.	Knoxville, Deerfield Milling Co.	170	8.73	15.38	14.00
4558	...... George A. Keck & Co., Allentown, Pa.	Allentown, Edwin S. Koch,	858	9.55	15.56	--------
3893	...... The William Kelly Milling Co., Hutchison, Kan.	Port Allegany, C. O. Neptune.	193	9.98	16.50	15.00
5150	Anchor, Kemper Mill & Elevator Co., Kansas City, Mo.	Waynesburg, Bert Hughes,	1450	8.88	16.06	14.50
3802	Anchor, Kemper Mill & Elevator Co., Kansas City, Mo.	Ulster, P. C. Pierce, -------	102	8.84	17.50	14.50
3960	Diamond, Kemper Mill & Elevator Co., Kansas City, Mo.	Ridgway, Smith Bros. Co.,	260	9.98	17.50	14.50
4019	Pure Eagle, J. B. A. Kern & Sons, Milwaukee, Wis.	Uniontown, Hogsett & Hawkins.	319	10.17	15.81	14.00
4674	...... Klepser Bros., Martinsburg, Pa.	Martinsburg, Klepser Bros.,	974	8.45	16.88	--------

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
4.48	4.04	9.20	8.01	$28 00	Pure wheat bran,	As certified,	4604
4.10	--------	8.32	--------	1 85	Wheat bran,	As certified,	4679
5.08	--------	10.07	--------	1 35	Wheat bran,	As certified,	4940
5.68	--------	10.20	--------	1 20	Wheat bran,	As certified,	4829
5.45	3-6	10.00	--------	1 40	Pure wheat bran,	As certified,	3988
5.48	3-6	10.48	--------	1 60	Pure wheat bran,	As certified,	3962
4.33	--------	8.75	--------	1 35	Wheat bran,	As certified,	4982
4.60	--------	9.57	--------	28 00	Pure wheat bran,	As certified,	4865
5.13	--------	9.47	--------	24 00	Pure wheat bran,	As certified,	4445
4.83	--------	9.22	--------	1 30	Pure wheat bran,	As certified,	4407
5.85	4.80	11.30	11.50	24 00	--------	Wheat bran,	4476
5.68	4.80	11.50	11.50	1 30	--------	Wheat bran,	4413
5.75	4.80	10.50	11.20	1 50	Pure flakey bran,	Wheat bran,	4564
5.80	4.80	10.28	11.50	27 00	Pure flakey bran,	Wheat bran,	4220
4.80	3.50	8.15	--------	30 00	Pure winter wheat bran,	As certified,	3898
4.45	3.50	9.55	--------	29 00	Made from pure wheat,	As certified,	3955
4.53	4.00	8.53	9.50	29 00	Pure winter wheat product.	As certified,	3943
4.35	4.00	8.30	9.50	1 40	Pure winter wheat product.	As certified,	5026
4.50	4.00	9.95	9.50	1 75	Pure winter wheat product.	As certified.	4712
4.45	4.00	9.00	9.50	1 25	Pure winter wheat product.	As certified,	4597
4.83	--------	8.10	--------	30 00	--------	Wheat bran,	3910
5.08	--------	9.42	--------	26 00	Wheat bran,	As certified,	4567
5.68	4.00	10.05	--------	28 00	Pure spring wheat bran,	As certified,	3870
5.35	--------	7.50	--------	1 40	Wheat bran,	As certified,	4558
4.63	4.00	9.35	--------	1 50	--------	Wheat bran,	3893
4.30	4.00	9.82	9.50	1 50	Made from pure wheat,	As certified,	5150
4.55	4.00	8.81	9.50	1 40	Made from pure wheat,	As certified,	3802
5.30	4.00	8.00	9.50	1 50	Made from pure wheat,	As certified,	3960
5.05	3.00	11.24	10.50	30 00	Pure eagle bran,	As certified,	4019
4.45	--------	8.87	--------	1 35	Wheat bran,	As certified,	4674

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
4524	..... Kutztown Roller Mills, Kutztown, Pa.	Kutztown, Kutztown Roller Mills.	824	8.10	16.38	--------
4159	Fancy Coarse, Lagrange Mills, Red Wing, Minn.	Kinzer, E. E. & W. J. L. Walker.	459	10.18	16.69	14.00
4464	...... Lebanon Milling Co., Lebanon, Pa.	Lebanon, Lebanon Milling Co.	764	10.01	15.50	--------
4684	...... C. E. Lingafelt, Hollidaysburg, Pa.	Hollidaysburg, C. E. Lingafelt.	984	9.35	16.75	--------
3866	Elmco, Listman Milling Co., La Crosse, Wis.	Knoxville, J. H. Burch, --	166	9.42	17.50	16.94
4193	Elmco Fancy, Listman Milling Co., La Crosse, Wis.	York, F. Z. Stauffer, ----	493	10.33	17.75	17.25
3722	Elmco, Listman Milling Co., La Crosse, Wis.	Indiana, James St. Clair,	22	11.98	17.38	16.94
4361	Elmco, Listman Milling Co., La Crosse, Wis.	Gettysburg, C. M. Wolf, Jr.	661	10.05	17.88	17.25
4000	...... Loughry Bros. Milling and Grain Co., Monticello, Ind.	Jeannette, N. C. Maines,--	300	10.51	16.56	15.56
4601	...... H. H. Lysinger, Bedford, Pa.	Bedford, H. H. Lysinger,--	901	10.38	15.88	--------
4291	...... Manbeck & Nelson, Mifflin, Pa.	Mifflin, Manbeck & Nelson,	591	9.70	17.44	--------
4390	...... C. Manegold Milling Co., Milwaukee, Wis.	Scotland, M. Ickes, --------	690	9.87	16.38	15.00
4412	...... Marshall Milling Co., Marshall, Minn.	Carlisle, S. B. Jackson, --	712	9.21	16.31	15.00
4873	Pure, C. P. Matthews & Sons, Inc., Scranton, Pa.	Wilkes-Barre, C. P. Matthews & Sons, Inc.	1173	8.76	16.63	13-14.38
4772	Mixed, Mauser Mill Co., Lawry's, Pa.	Mt. Carmel, Schneider Bros.	1072	9.07	16.44	12-16
4549	Mixed, Mauser Mill Co., Lawry's, Pa.	Allentown, A. T. Stover Est.	849	9.34	16.88	12-16
4062	...... R. S. McCague, Pittsburg, Pa.	Apollo, L. Todd Owens, --	362	11.22	15.94	--------
5193	...... J. & C. McClune, Pittsburg, Pa.	Braddock, George Moore, --	1493	9.04	17.38	--------
4927	...... Miner-Hillard Milling Co., Wilkes-Barre, Pa.	Scranton, Miner - Hillard Milling Co.	1227	8.17	15.88	--------
5002	Pure Winter, National Feed Co., St. Louis, Mo.	Sharon, Smith & Kelly, ---	1302	8.49	15.31	14.00
5073	Pure Winter, National Feed Co., St. Louis, Mo.	Tyrone, Tyrone Milling Co.,	1373	8.86	16.31	14.00
4164	Pure, The National Milling Co., Toledo, Ohio.	Columbia, Columbia Milling Co.	464	9.15	17.44	--------
4618	Hardenbergh's Extra Coarse, National Milling Co., Minneapolis, Minn.	Altoona, J. B. Forsht, ---	918	8.58	18.25	15-17
5020	Hardenbergh's Extra Coarse, National Milling Co., Minneapolis, Minn.	Oil City, New Model Milling Co.	1320	9.79	17.50	15-17
4747	Hardenbergh's Extra Coarse, National Milling Co., Minneapolis, Minn.	Wallaceton, E. K. Turner,	1047	8.95	17.38	15-17
4298	Hardenbergh's Extra Coarse, National Milling Co., Minneapolis, Minn.	Reynoldsville, Wallace & Stefl.	598	9.85	17.81	15-17
4781	Seal of Minnesota, New Prague Flouring Mill Co., New Prague, Minn.	Milton, E. Datesman, ----	1081	7.49	15.94	13.50
4432	Seal of Minnesota, New Prague Flouring Mill Co., New Prague, Minn.	Harrisburg, Mock & Hartman.	732	9.36	15.88	13.50
4667	Seal of Minnesota, New Prague Flouring Mill Co., New Prague, Minn.	Altoona, R. F. Notley, ----	967	8.32	15.38	13.50
4805	Seal of Minnesota, New Prague Flouring Mill Co., New Prague, Minn.	Lewisburg, Wolfe & Shultz,	1105	9.05	15.06	13.50

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
4.83		8.00		$1 40	Wheat bran,	As certified,	4524
5.50	3.50	11.60	12.60	27 00	Pure and unadulterated wheat bran.	As certified,	4159
4.90		8.92		26 00	Wheat bran,	As certified,	4464
4.15		8.20		1 50	Wheat bran,	As certified,	4684
5.80	4.80	9.60	10.00	28 00	Pure and unadulterated wheat bran.	As certified,	3866
5.93	4.58	9.55	11.03	26 00	Pure and unadulterated wheat bran.	As certified,	4193
5.73	4.88	9.25	10.00	1 50	Pure and unadulterated wheat bran.	As certified,	3722
5.75	4.58	9.77	11.03	1 30	Pure and unadulterated wheat bran.	As certified,	4361
5.33	3.81	8.90		29.00	Pure wheat bran,	As certified,	4000
4.78		9.25		1 20	Wheat bran,	As certified,	4601
4.75		7.30		28 00	Wheat bran,	As certified,	4291
5.08	4.00	10.02	11.00	26 00		Wheat bran,	4390
5.33	4.80	11.37	11.80	1 30		Wheat bran,	4412
4.95	4-5.31	10.00	10.90-12	1 45	Pure wheat bran,	As certified,	4873
5.28	3-4	9.90	6-10	1 45		Wheat bran,	4772
5.85	3-4	9.37	6-10	1 40	Bran,	As certified,	4549
4.38		9.82		1 55		Wheat bran,	4062
4.28		9.38		1 50	Wheat bran,	As certified,	5193
4.35		8.50		30 00	Pure wheat bran,	As certified,	4927
4.80	4.00	10.15	8.00	1 40	Pure winter wheat bran,	As certified,	5002
4.80	4.00	8.47	8.00	26 00	Made from pure wheat,	As certified,	5073
5.80		10.22		28 00	Pure wheat bran,	As certified,	4164
5.85	4-5	8.72		26 00	Pure and unadulterated wheat.	As certified,	4618
5.78	4-5	8.42		25 00	Pure and unadulterated wheat bran.	As certified,	5020
5.63	4-5	7.67		27 00	Pure and unadulterated wheat bran.	As certified,	4747
5.75	4-5	8.57		1 30	Pure and unadulterated wheat bran.	As certified,	4298
5.45	4.00	11.72	12.05	1 40	Pure and unadulterated wheat bran.	As certified,	4781
5.10	4.00	11.37	12.05	24 00	Pure and unadulterated wheat bran.	As certified,	4432
5.35	4.00	11.90	12.50	1 50	Pure and unadulterated bran.	As certified,	4667
5.75	4.00	11.12	12.05	26 00	Pure and unadulterated bran.	As certified,	4806

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
4396	Northland, Northland Milling Co., Larimore, N. Dak.	Newville, H. Manning & Son.	696	10.61	15.44	12.80
4639	...... The Northwestern Consolidated Milling Co., Minneapolis, Minn.	Altoona, Central Feed Co.,	939	9.39	16.44	14.50
4835	...... The Northwestern Consolidated Milling Co., Minneapolis, Minn.	Danville, Danville Milling Co.	11.35	8.80	15.56	14.25
3928	...... The Northwestern Consolidated Milling Co., Minneapolis, Minn.	Bradford, L. A. Fischer & Co.	228	9.73	16.94	14.50
4611	...... The Northwestern Consolidated Milling Co., Minneapolis, Minn.	Altoona, J. B. Forsht, ---	911	9.83	16.19	14.50
3884	...... The Northwestern Consolidated Milling Co., Minneapolis, Minn.	Coudersport, Gates Bros.,--	184	10.74	16.13	14.25
4483	...... The Northwestern Consolidated Milling Co., Minneapolis, Minn.	Myerstown, Z. T. Gingrich,	783	10.02	15.88	14.50
4692	Pure, The Northwestern Consolidated Milling Co., Minneapolis, Minn.	Tyrone, M. Hamer, ...	992	8.22	16.44	14.50
4566	...... The Northwestern Consolidated Milling Co., Minneapolis, Minn.	Huntingdon, Huntingdon Milling Co.	866	9.71	16.81	14.50
4938	Pure, The Northwestern Consolidated Milling Co., Minneapolis, Minn.	Scranton, C. P. Matthews & Sons, Inc.	1238	9.06	16.38	14.50
4151	...... The Northwestern Consolidated Milling Co., Minneapolis, Minn.	Manheim, F. K. Nauman,--	451	11.47	16.50	14.50
4405	Pure, The Northwestern Consolidated Milling Co., Minneapolis, Minn.	Paxton Carlisle, Flour and Feed Co.	705	8.17	17.13	14.50
4886	Pure, The Northwestern Consolidated Milling Co., Minneapolis, Minn.	Wilkes-Barre, Robbins Milling Co.	1186	8.89	16.56	14.50
5131	Pure, The Northwestern Consolidated Milling Co., Minneapolis, Minn.	Somerset, Saylor & Woy,--	1431	9.42	16.13	14.50
4523	...... The Northwestern Consolidated Milling Co., Minneapolis, Minn.	Kutztown, John A. Schwoyer.	823	9.40	16.75	14.50
4904	Pure, The Northwestern Consolidated Milling Co., Minneapolis, Minn.	Hazleton, John G. Seager's Sons.	1204	7.91	16.09	14.50
4734	Fancy Spring, Northwestern Milling Co., Little Falls, Minn.	Du Bois, Timlin & Rishel,	1064	8.27	15.88	12.50
5099	...... The Oakes Flour Mills, Oakes, N. Dak.	Chester, Chester Milling Co.	1390	8.92	16.68	14.80
5182	Winter, The Ohio Cereal Co., Circleville, Ohio.	Carnegie, J. H. Burgan & Son.	1482	10.64	16.50	14.50
4794	...... S. F. Phillips & Son, Milton, Pa.	Milton, S. F. Phillips & Son.	1094	7.98	16.09	--------
4260	...... Pillsbury Flour Mills, Minneapolis, Minn.	West Chester, I. H. Bailey,	560	10.31	15.50	14.50
4836	...... Pillsbury Flour Mills, Minneapolis, Minn.	Danville, Danville Milling Co.	1136	9.01	15.56	14.50
4084	Pillsbury's, Pillsbury Flour Mills, Minneapolis, Minn.	Kittanning, J. A. Gault & Co.	384	9.52	15.44	14.50
3987	...... Pillsbury Flour Mills, Minneapolis, Minn.	Irwin, Taylor Kunkle, ...	287	9.89	16.06	14.50
4930	Pure, Pillsbury Flour Mills, Minneapolis, Minn.	Scranton, Miner - Hillard Milling Co.	1230	8.73	15.63	14.50
4436	Pillsbury's, Pillsbury Flour Mills, Minneapolis, Minn.	Harrisburg, I. L. Nailor,--	736	8.59	16.31	14.50

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
5.60	4.50	11.22	11.07	$26 00	Unadulterated wheat bran.	As certified, ...	4396
5.13	4.00	10.95	11.00	1 50	Pure wheat bran, ...	As certified, ...	4639
5.23	4.00	11.63	12.00	23 00	Pure wheat bran, ...	As certified, ...	4835
6.00	4.00	9.97	11.00	28 00	Pure wheat bran, ...	As certified, ...	3928
5.43	4.00	10.70	11.00	26 00	Pure wheat bran, ...	As certified, ...	4611
5.95	4.00	11.43	12.00	1 50	Pure wheat bran, ...	As certified, ...	3884
5.50	4.00	10.65	11.00	24 50	Pure wheat bran, ...	As certified, ...	4483
5.50	4.00	10.95	11.00	28 00	Pure wheat bran, ...	As certified, ...	4692
5.58	4.00	9.95	11.00	26 00	Pure wheat bran, ...	As certified, ...	4566
5.63	4.00	11.05	11.00	1 40	Pure wheat bran, ...	As certified, ...	4938
5.83	4.00	10.22	11.00	27 00	Pure wheat bran, ...	As certified, ...	4151
5.53	4.00	9.90	11.00	1 30	Pure wheat bran, ...	As certified, ...	4405
5.43	4.00	10.90	11.00	29 00	Pure wheat bran, ...	As certified, ...	4886
5.73	4.00	10.27	11.00	1 40	Pure wheat bran, ...	As certified, ...	5131
5.60	4.00	10.50	11.00	1 30	Pure wheat bran, ...	As certified, ...	4523
5.30	4.00	10.95	11.00	1 30	Pure wheat bran, ...	As certified, ...	4904
5.00	3.70	11.30	....	1 40	....	Wheat bran, ...	4734
4.95	4.90	10.69	8.50	1 40	....	Wheat bran, ...	5099
4.58	4.00	8.74	9.50	1 45	Winter wheat bran screenings included.	Wheat bran, ...	5182
4.85	....	8.80	....	1 40	Wheat bran, ...	As certified, ...	4794
5.48	4.00	11.50	9.50	26 00	Pure and unadulterated wheat bran, ...	As certified, ...	4260
4.60	4.00	11.45	9.50	23 00	Pure wheat bran, ...	As certified, ...	4836
5.15	4.00	10.70	9.50	1 40	Pure and unadulterated wheat flour bran.	As certified, ...	4084
5.75	4.00	10.52	9.50	1 40	Pure and unadulterated wheat bran.	As certified, ...	3987
4.90	4.00	11.70	9.50	1 35	Pure and unadulterated wheat bran.	As certified, ...	4930
5.75	4.00	11.27	9.50	1 25	Pure and unadulterated wheat bran.	As certified, ...	4436

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein. Found.	Crude Protein. Guaranteed.
				Per ct.	Per ct.	Per ct.
3972	...... Pillsbury's Flour Mills, Minneapolis, Minn.	Greensburg, Harry Orr & Co.	272	10.93	16.81	14.50
4710	Pillsbury's, Pillsbury Flour Mills, Minneapolis, Minn.	Philipsburg, Philipsburg Milling, Lighting and Heating Co.	1010	8.91	15.56	14.50
4627	...... Pillsbury Flour Mills, Minneapolis, Minn.	Altoona, P. W. Poet, ...	927	8.51	15.50	14.50
4687	...... Pillsbury Flour Mills, Minneapolis, Minn.	Hollidaysburg, Thermic Coal and Supply Co.	987	8.22	16.19	14.60
5183	Pure, The Piqua Milling Co., Piqua, Ohio.	Wilmerding, Routh & Co.,	1483	10.10	16.94	14.00
4315	Napoleon Coarse, Prudential Milling Co., Minneapolis, Minn.	Williamsport, M. E. Donnell & Co.	615	8.74	15.94	14.50
4134	Napoleon, Prudential Milling Co., Minneapolis, Minn.	Lititz, Aaron G. Hershey,	434	10.67	15.19	14.50
3710	Napoleon Coarse, Prudential Milling Co., Minneapolis, Minn.	Saltsburg, G. W. Martin & Co.	10	9.81	16.13	14.50
4402	Bixota, Red Wing Milling Co., Red Wing, Minn.	Newville, S. E. Shenk, ...	702	9.26	15.88	15.00
4562	...... The Saeger Milling Co., Allentown, Pa.	Allentown, The Saeger Milling Co.	862	9.40	15.19	--------
4527	...... Schaeffer, Wanner & Co., Fleetwood, Pa.	Fleetwood, Schaeffer, Wanner & Co.	827	10.64	17.06	--------
4552	Pure, H. N. Schleifer, Allentown, Pa.	Allentown, H. N. Schleifer,	852	10.44	15.88	--------
4519	...... Schuylkill Flour Mills, Leesport, Pa.	Reading, Strunk & Moyer,..	819	10.00	15.81	--------
4973	...... Scott Logan Milling Co., Sheldon, Ia.	New Castle, F. W. Hutchison & Son.	1273	8.77	16.18	13.00
4849	...... The Security Flour Mills, Abilene, Kan.	Catawissa, M. J. Grimes & Bro.	1149	7.18	16.38	--------
4999	...... Sharon Milling Co., Sharon, Pa.	Sharon, Sharon Milling Co.,	1299	8.80	16.00	--------
4294	...... Sleepyeye Milling Co., Sleepyeye, Minn.	Lindsey, Lindsey Milling Co.	504	10.15	16.94	15.10
3854	...... Sleepyeye Milling Co., Sleepyeye, Minn.	Wellsboro, B. Schrader & Son.	154	8.81	16.38	15.10
3915	...... The Southwestern Milling Co., Kansas City, Mo.	Kane, J. A. Stoll & Co.,..	215	9.54	16.19	14.00
4282	...... Spanogle-Yeager Milling Co., Lewistown, Pa.	Lewistown, Spanogle-Yeager Milling Co.	582	9.48	17.63	--------
4724	Pure, Standard-Tilton Milling Co., St. Louis, Mo.	Osceola Mills, Brown, Baird & Reeve.	1024	9.13	18.56	14.00
5157	Pure Winter, Standard-Tilton Milling Co., St. Louis, Mo.	Canonsburg, Canonsburg Milling Co.	1457	10.96	16.88	14.50
4028	Pure, Standard-Tilton Milling Co., St. Louis, Mo.	McKeesport, A. Davison, ..	328	11.23	18.44	14.00
4582	...... Standard Tilton Milling Co., St. Louis, Mo.	Mt. Union, J. E. Ewing, ..	882	8.64	18.69	14.00
3979	...... Standard-Tilton Milling Co., St. Louis, Mo.	Greensburg, McFarland Supply Co.	279	10.57	18.06	14.00
5059	Pure, Star & Crescent Milling Co., Chicago, Ill.	Union City, Haniel Clark & Co.	1359	8.46	16.38	15.00
5199	Pure, Star & Crescent Milling Co., Chicago, Ill.	Braddock, C. B. Marriott & Sons.	1499	9.54	15.19	15.00
4063	Stocks, F. W. Stock & Sons, Hillsdale, Mich.	Apollo, L. Todd Owens, ...	363	9.53	16.31	--------
5058	Pure, W. H. Stokes Milling Co., Watertown, S. Dak.	Union City, Haniel Clark & Co.	1358	7.89	15.56	15.00
4465	...... C. F. & W. H. Strickler Milling Co., Lebanon, Pa.	Lebanon, C. F. & W. H. Strickler Milling Co.	765	9.31	17.94	--------
3747	...... Swope Bros., Johnstown, Pa.	Johnstown, Swope Bros., ..	47	9.74	15.81	--------

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
5.78	4.00	10.24	9.50	$28 00	Pure and unadulterated wheat bran.	As certified, ----------	3972
5.45	4.00	12.02	9.50	1 75	Wheat bran, --------------	As certified, ----------	4710
5.23	4.00	10.85	9.50	30 00	Pure and unadulterated wheat bran.	As certified, ----------	4627
5.20	4.00	11.71	9.50	1 40	Pure and unadulterated wheat bran.	As certified, ----------	4687
4.10	3.00	8.47	--------	1 60	Pure wheat bran, --------	As certified, ----------	5183
5.70	4.00	11.17	11.00	1 50	Pure hard wheat bran, --	As certified, ----------	4815
6.23	4.00	11.48	11.00	28 00	Pure hard wheat coarse bran.	Wheat bran and small amount corn cockle and oat hulls.	4134
5.55	4.00	11.84	11.00	27 00	Pure wheat bran, --------	As certified, ----------	3710
5.25	4.00	11.30	11.03	27 00	----------------------------	Wheat bran, ---------	4403
4.78	--------	9.00	--------	1 30	Wheat bran, --------------	As certified, ----------	4562
4.25	--------	7.50	--------	1 25	Wheat bran, --------------	As certified, ----------	4527
4.83	--------	7.95	--------	1 30	Pure wheat bran, --------	As certified, ----------	4552
5.38	--------	10.90	--------	1 30	Wheat bran, --------------	As certified, ----------	4519
4.95	4.00	10.41	7.00	1 30	----------------------------	Wheat bran, ---------	4973
4.58	--------	10.22	--------	1 30	Wheat bran, --------------	As certified, ----------	4849
4.45	--------	9.10	--------	1 30	Wheat bran, --------------	As certified, ----------	4999
5.18	3.70	8.65	11.00	1 50	Pure wheat bran, --- ----	As certified, ----------	4294
5.10	3.70	8.58	11.00	30 00	Pure wheat bran, --------	As certified, ----------	3854
4.45	4.50	9.70	10.00	29 00	----------------------------	Wheat bran, ---------	3915
4.33	--------	8.20	--------	28 00	Wheat bran, --------------	As certified, ----------	4282
4.45	3.50	8.37	--------	1 50	Made from pure wheat, --	As certified, ----------	4724
4.60	4.00	8.49	9.50	25 00	Made from pure wheat, --	As certified, ----------	5157
4.58	3.50	8.09	--------	30 00	Made from pure wheat, --	As certified, ----------	4028
4.50	3.50	8.65	--------	28 00	Made from pure wheat, --	As certified, ----------	4582
4.50	3.50	8.20	--------	29 00	Made from pure wheat, --	As certified, ----------	3979
5.53	4.00	10.25	10.00	1 25	Pure wheat bran, --------	As certified, ----------	5059
5.20	4.00	9.02	10.00	1 65	Pure wheat bran, --------	As certified, ----------	5199
4.68	--------	8.73	--------	1 55	Pure winter wheat bran, --	As certified, ----------	4063
5.85	4.00	12.02	9.79	1 25	Pure wheat bran, --------	As certified, ----------	5058
5.80	--------	8.57	--------	25 00	Wheat bran, --------------	As certified, ----------	4465
5.40	--------	11.04	--------	30 00	Wheat bran, --------------	As certified, ----------	3747

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein. Found.	Crude Protein. Guaranteed.
				Per ct.	Per ct.	Per ct.
4235	------ Tennant & Hoyt Co., Lake City, Minn.	Hanover, George Hull & Sons.	535	10.48	16.44	15.00
4160	Pure, Tennant & Hoyt Co., Lake City, Minn.	Elizabethtown, E. H. Lehman.	469	9.76	16.81	13.20
4227	Fancy, George Tileston Milling Co., St. Cloud, Minn.	Hanover, Hanover Feed & Coal Co.	527	9.83	15.69	14.00
3006	Winter, The Toledo Grain & Milling Co., Toledo, Ohio.	Ridgway, Hall, Kaul & Hyde Co.	206	10.38	15.50	--------
5031	Winter, The Toledo Grain & Milling Co., Toledo, Ohio.	Tionesta, G. W. Robinson & Son.	1331	9.54	15.50	--------
3959	Winter, The Toledo Grain & Milling Co., Toledo, Ohio.	Ridgway, Smith Bros. Co.,	259	11.10	15.94	--------
4689	------ Tyrone Milling Co., Tyrone, Pa.	Tyrone, Tyrone Milling Co.,	989	9.95	16.25	--------
3927	------ George Urban Milling Co., Buffalo, N. Y.	Bradford, L. A. Fischer & Co.	227	9.45	17.13	--------
3911	Valier's, Valier & Spies Milling Co., Marine, Ill.	St. Marys, L. Ritter, -----	211	9.80	15.19	14.50-17
4713	------ C. Y. Wagner, Bellefonte, Pa.	Philipsburg, Philipsburg Milling, Lighting and Heating Co.	1018	9.94	16.69	--------
5153	------ Waynesburg Milling Co., Waynesburg, Pa.	Waynesburg, Waynesburg Milling Co.	1453	9.18	16.38	--------
4632	Coarse, Washburn-Crosby Co., Minneapolis, Minn.	Altoona, Altoona Feed Mills	932	10.05	16.19	14.50
4443	Coarse, Washburn-Crosby Co., Minneapolis, Minn.	Middletown, S. J. Baer, --	743	10.03	16.31	14.50
3926	------ Washburn-Crosby Co., Minneapolis, Minn.	Johnsonburg, Cash Wholesale Co.	226	9.77	16.63	14.50
4591	Coarse, Washburn-Crosby Co., Minneapolis, Minn.	Bedford, Davidson Bros., -	891	8.68	16.75	14.50
4131	------ Washburn-Crosby Co., Minneapolis, Minn.	Lancaster, Esbenshade & Co.	431	9.51	17.38	14.50
4479	Coarse, Washburn-Crosby Co., Minneapolis, Minn.	Myerstown, Z. T. Gingrich,	779	9.53	16.13	14.50
4242	Coarse, Washburn-Crosby Co., Minneapolis, Minn.	Coatesville, P. D. Handwork Co.	542	8.73	17.69	14.50
4440	Coarse, Washburn-Crosby Co., Minneapolis, Minn.	Harrisburg, Hoffer & Garman.	740	10.39	15.94	14.50
4778	Coarse, Washburn-Crosby Co., Minneapolis, Minn.	Milton Thomas R. Hull, -	1078	8.35	16.81	14.50
4503	Coarse, Washburn-Crosby Co., Minneapolis, Minn.	Reading, Reading Grain Co.	803	8.77	16.69	14.50
4285	Coarse, Washburn-Crosby Co., Minneapolis, Minn.	McVeytown, John T. Rodgers.	585	9.70	17.13	14.50
4587	Coarse, Washburn-Crosby Co., Minneapolis, Minn.	Mt. Union, David Rummel,	887	9.34	16.44	14.50
4962	Coarse, Washburn-Crosby Co., Minneapolis, Minn.	Butler, B. F. Shannon & Co.	1262	9.72	15.25	14.50
4281	Coarse, Washburn-Crosby Co., Minneapolis, Minn.	Lewistown, Spanogle, Yeager Milling Co.	581	9.22	17.81	14.50
4569	Coarse, Washburn-Crosby Co., Minneapolis, Minn.	Huntingdon, Stouffer and Brenneman.	869	8.89	16.31	14.50
4420	Coarse, Washburn-Crosby Co., Minneapolis, Minn.	Mt. Holly Springs, J. N. Weigel.	720	8.57	16.75	14.50
4489	Coarse, Washburn-Crosby Co., Minneapolis, Minn.	Reading, Aug. C. Wertz & Bro.	789	8.44	15.31	14.50
4363	Coarse, Washburn-Crosby Co., Minneapolis, Minn.	Waynesboro, West & West,	663	9.79	16.38	14.50
4902	Hard Wheat Coarse, Washburn-Crosby Co., Minneapolis, Minn.	Wilkes-Barre, Wilkes-Barre Milling Co.	1202	7.95	16.50	14.50
4840	Feedwell, Wells Flour Milling Co., Wells, Minn.	Bloomsburg, Bloomsburg Roller Mills.	1140	8.58	15.88	13.50
4980	Choice Winter, M. Weltin, Quincy, Ill.	Harmony, Harmony Cereal Co.	1280	10.10	15.50	14.30

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
5.60	....	9.90	....	$25 00	....	Wheat bran, ...	4986
5.80	4.90	10.10	13.10	26 00	Pure wheat bran, ...	As certified, ...	4160
5.43	4.00	10.95	12.00	27 00	Pure wheat bran, ...	As certified, ...	4227
4.85	....	9.96	....	1 60	Pure and unadulterated wheat bran.	As certified, ...	3906
4.30	....	8.42	....	1 50	Pure and unadulterated wheat bran.	As certified, ...	5031
4.68	....	9.08	....	1 75	Pure and unadulterated wheat bran.	As certified, ...	3959
3.58	....	8.47	....	27 00	Wheat bran, ...	As certified, ...	4689
5.85	....	10.39	....	28 00	Wheat bran, ...	As certified, ...	3927
5.18	3.50-5	9.25	5-10	30 00	Pure winter wheat, ...	As certified, ...	3911
4.00	....	9.27	....	1 75	Pure winter wheat bran,	As certified, ...	4713
4.15	....	8.06	....	29 00	Wheat bran, ...	As certified, ...	5153
4.80	4.00	11.37	11.00	1 40	Pure hard wheat bran, ..	As certified, ...	4682
5.50	4.00	10.90	11.00	25 00	Pure hard wheat coarse bran.	As certified, ...	4443
5.90	4.00	10.56	11.00	29 00	Unadulterated wheat bran.	As certified, ...	3926
5.78	4.00	10.40	11.00	1 25	Pure hard wheat coarse bran.	As certified, ...	4591
6.55	4.00	10.46	11.00	27 50	Pure hard wheat coarse bran.	Wheat bran, considerable amount of chaff and small amount of flax seed and corn cockle.	4131
5.50	4.00	10.60	11.00	24 00	Pure hard wheat bran, ..	As certified, ...	4479
6.40	4.00	10.00	11.00	24 50	Pure hard wheat coarse bran.	As certified, ...	4242
5.33	4.00	10.32	11.00	25 00	Unadulterated coarse wheat bran.	As certified, ...	4440
5.45	4.00	10.12	11.00	1 50	Pure hard wheat coarse bran.	As certified, ...	4778
5.80	4.00	10.90	11.00	25 00	Unadulterated coarse wheat bran.	As certified, ...	4503
5.98	4.00	10.20	11.00	1 50	Pure hard wheat bran, ..	As certified, ...	4285
5.70	4.00	11.25	11.00	1 40	Pure hard wheat coarse bran.	As certified, ...	4587
5.25	4.00	10.70	11.00	25 00	Pure hard wheat bran, ..	As certified, ...	4962
5.78	4.00	9.20	11.00	27 00	Pure hard wheat bran, ..	As certified, ...	4281
6.10	4.00	11.00	11.00	28 00	Pure hard wheat coarse bran.	As certified, ...	4569
5.50	4.00	10.72	11.00	1 35	Pure hard wheat coarse bran.	As certified, ...	4420
5.28	4.00	11.65	11.00	24 00	Pure hard wheat coarse bran.	As certified, ...	4489
5.70	4.00	11.42	11.00	28 00	Pure hard wheat coarse bran.	As certified, ...	4363
5.33	4.00	11.55	11.00	1 45	Pure wheat bran, ...	As certified, ...	4902
5.35	4.00	12.35	12.50	27 00	Pure and unadulterated wheat bran.	As certified, ...	4840
4.55	3.55	8.52	....	1 30	Made from pure wheat,	As certified, ...	4980

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
4492	Pure, George W. Wertz, Wernersville, Pa.	Reading, George W. Wertz,	792	9.05	16.25	--------
4498	------ Wertz Milling Co., Reading, Pa.	Reading, Wertz Milling Co.,	798	9.82	17.25	--------
4384	Black Hawk, Western Flour Mill Co., Davenport, Iowa.	Shippensburg, Allison and Fogelsonger.	684	10.00	16.44	13.50
3715	Black Hawk, Western Flour Mill Co., Davenport, Iowa.	Homer City, A. George and Son.	15	12.45	15.75	14.00
4228	Black Hawk, Western Flour Mill Co., Davenport, Iowa.	Hanover, Hanover Feed & Coal Co.	528	8.90	17.00	14.00
4804	Black Hawk, Western Flour Mill Co., Davenport, Iowa.	Lewisburg, Wolf & Shultz,	1104	10.01	15.50	13.50
4997	Star Winter, The Western Star Mill Co., Salina, Kans.	Sharon, J. M. Porter, ----	1297	9.24	17.06	14–17
4012	Star Winter, The Western Star Mill Co., Salina, Kans.	Scottdale, J. E. Pritts, ---	312	10.94	18.69	14–17
4845	------ The White Milling Co., Bloomsburg, Pa.	Bloomsburg, The White Milling Co.	1145	8.45	16.56	--------
4592	------ Winnebago Flour Mills Co., Winnebago, Minn.	Bedford, N. M. Diehl, ----	892	9.29	16.13	14.00
4018	------ Winnebago Flour Mills Co., Winnebago, Minn.	Uniontown, Hogsett & Hankins.	318	9.65	15.25	14.00
4581	------ E. S. Woodworth & Co., Minneapolis, Minn.	Mt. Union, J. E. Ewing, -	881	8.95	16.00	14.50
4015	Snow's Flaky, E. S. Woodworth & Co., Minneapolis, Minn.	Uniontown, W. S. Smith,--	315	9.67	15.88	14.25
4620	------ Isaac Woomer, Graysville, Pa.	Altoona, Martin & Co., --	920	9.74	15.63	--------
4511	------ A. Yocom's Sons & Co., Reading, Pa.	Reading, A. Yocom's Sons & Co.	811	10.05	16.75	--------
4812	------ J. F. Youngman, Selinsgrove, Pa.	Selinsgrove, J. F. Youngman.	1112	9.36	17.00	--------
5130	"Z" pure, Zenith Milling Co., Kansas City, Mo.	Somerset, Saylor & Woy,-	1430	10.20	14.75	14.50
5164	"P," Unknown, -------------	Canonsburg, Canonsburg Milling Co.	1464	9.16	17.19	--------
5093	Pure, Unknown, -------------	Pottstown, W. H. Moser, -	1393	9.50	15.38	--------
3920	------ Unknown, -------------	Kane, Swanson Grocery Co.	220	10.82	16.38	--------
		Average, ---------------	--------	9.48	16.37	--------
	RYE OFFALS.					
	Rye Middlings.					
4766	------ Blank & Gottshall, Sunbury, Pa.	Sunbury, Blank & Gottshall	1066	10.17	17.19	--------
4839	------ Bloomsburg Roller Mills, Bloomsburg, Pa.	Bloomsburg, Bloomsburg Roller Mills.	1139	9.53	15.75	--------
4541	Eagle, J. B. A. Kern & Sons, Milwaukee, Wis.	Allentown, Frank J. Erdman.	841	9.70	16.19	15.50
4098	Pure Eagle, J. B. A. Kern & Sons, Wilwaukee, Wis.	New Brighton, J. H. Hornby & Sons.	398	9.80	16.25	13.30
4408	Eagle, J. B. A. Kern & Sons, Milwaukee, Wis.	Carlisle, S. B. Jackson, ---	708	10.41	15.56	15.50
4109	Pure Eagle, J. B. A. Kern & Sons, Wilwaukee, Wis.	Lancaster, Nein & Fisher, -	409	10.89	16.00	13.30
4929	------ Miner-Hillard Milling Co., Miner's Mills, Pa.	Scranton, Miner-Hillard Milling Co.	1229	1.52	14.69	--------
4556	------ Miner-Hillard Milling Co., Miner's Mills, Pa.	Allentown, H. N. Schleifer,	856	9.88	15.06	--------

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
5.33	....	9.50	....	$1 40	Pure wheat bran,	As certified,	4492
4.45	....	7.12	....	24 00	Wheat bran,	As certified,	4498
5.35	4.00	10.15	12.50	26 00	Wheat bran,	As certfied,	4384
5.23	4.35	10.80	10.50	26 00	Purity guaranteed,	As certified,	3715
5.10	4.08	9.42	12.00	27 00	Weight and purity guaranteed.	As certified,	4228
4.75	4.00	10.97	12.50	26 00	Wheat bran,	As certified,	4804
5.00	3-5	9.70	....	26 00	Pure winter wheat bran,	As certified,	4997
4.25	3-5	9.08	....	28 00	Wheat bran,	As certified,	4012
4.88	....	9.80	....	26 00	Wheat bran,	As certified,	4845
5.10	4.00	10.30	....	1 20	....	Wheat bran,	4592
5.10	4.00	10.11	....	30 00	....	Wheat bran,	4018
5.20	4.00	6.60	11 00	28 00	....	Wheat bran,	4581
5.25	4.00	10.82	12.00	1 50	Pure wheat product,	As certified,	4015
4.30	....	9.70	....	32 00	Pure wheat bran,	As certified,	4620
4.70	....	7.62	....	25 00	Wheat bran,	As certified,	4511
4.50	....	10.02	....	26 00	Wheat bran,	As certified,	4812
4.95	5.60	10.27	13.50	1 40	Pure wheat bran,	As certified,	5130
4.38	....	8.93	....	25 00	Pure and unadulterated,	As certified,	5164
4.56	....	8.67	....	1 35	Wheat bran,	As certified,	5033
4.85	....	8.57	....	30 00	....	Wheat bran,	3920
5.14	....	9.78	....	27 66			
3.55	....	4.85	....	1 30	Rye middlings,	As certified,	4766
3.58	....	4.35	....	30 00	Rye middlings,	As certified,	4839
3.68	3.25	7.51	4.60	1 30	Pure eagle rye middlings,	As certified,	4541
3.88	3.25	5.27	4.00	1 30	....	Rye middlings,	4098
3.80	3.25	6.27	4.60	1 50	Pure eagle rye middlings,	As certified,	4408
3.95	3.25	6.12	4.60	1 50	....	Rye middlings,	4109
3.40	....	4.27	....	27 00	Rye middlings,	As certified,	4929
3.55	....	3.96	....	1 35	Pure rye middlings,	As certified,	4555

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
4767	...... New Ulm Feed & Cereal Mill Co., New Ulm, Minn.	Shamokin, Shamokin Milling Co.	1067	10.52	17.31	14.00
4885	...... Samuel Raub & Son, Luzerne, Pa.	Wilkes-Barre, Robbins Milling Co.	1185	10.75	15.44	....
4969	Pure, Washburn-Crosby Co., Minneapolis, Minn.	New Castle, Fisher & Mengle.	1269	9.78	17.06	14.00
		Average, ...	....	10.09	16.05	....
	Mixed Feed. Rye By-Products.					
3860	...... The Birkett Mills, Penn Yan, N. Y.	Westfield, L. Plank, ...	160	9.81	15.25	....
3880	...... Eulalia Milling Co., Coudersport, Pa.	Coudersport, Eulalia Milling Co.	180	10.41	14.13	....
4521	Pure, Osceola Mill and Elevator Co., St. Croix Falls, Wis.	Kutztown, John A. Schwoyer.	821	11.10	16.38	....
		Average, ...	....	10.44	15.25	....
	WHEAT AND RYE OFFALS.					
	Wheat and Rye Middlings.					
4783	...... Blank & Gottshall, Sunbury, Pa.	Milton, E. Datesman, ...	1083	9.90	17.69	15-16
4894	...... Mauser Mill Co., Treichlers, Pa.	Wilkes-Barre, Kirkendall Son Co.	1194	10.20	17.81	12-16
4895	...... Mauser Mill Co., Laurys, Pa.	Wilkes-Barre, Kirkendall Son Co.	1195	11.03	15.94	12-16
4773	...... Mauser Mill Co., Laurys, Pa.	Mt. Carmel, Schneider Bros.	1073	11.43	15.56	12-16
4906	...... Mauser Mill Co., Laurys, Pa.	Hazleton, John G. Seager's Sons.	1206	10.39	14.81	12-16
		Average, ...	....	10.59	16.36	....
	Wheat and Rye Bran.					
4336	...... Crouch Bros. Co., Erie, Pa.	Lock Haven, F. H. Dyer,	636	9.28	17.81	....
4727	...... Crouch Bros. Co., Erie, Pa.	DuBois, A. T. Sprankle, ..	1027	8.65	17.38	15.00
4893	...... Mauser Mill Co., Treichlers, Pa.	Wilkes-Barre, Kirkendall Son Co.	1193	8.12	16.00	12-16
		Average, ...	....	8.68	17.06	....
	BUCKWHEAT OFFALS.					
	Buckwheat Middlings.					
3822	...... H. C. Rollison, Troy, Pa.	Troy, H. C. Rollison, ...	122	12.89	31.19	....
	Buckwheat Feeds.					
3861	...... The Birkett Mills, Penn Yan, N. Y.	Westfield, L. Plank, ...	161	11.53	15.58	13.00
3814	...... Cayuta Mills, Sayre, Pa.	Sayre, Cayuta Mills, ...	114	11.27	18.06	....
3797	...... Crescent Roller Mill, Ulster, Pa.	Ulster, Crescent Roller Mill,	97	10.26	12.91	....

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct	Per ct.	Per ct.	Per ct.				
3.70	3.00	5.82	5.50	$26 00	....	Rye middlings,	4767
3.05	....	4.97	....	30 00	Rye middlings,	As certified,	4885
3.80	3.00	4.75	6.00	1 40	Pure rye middlings,	As certified,	4969
3.63	....	5.23	....	27 82			
3.55	....	4.66	....	1 60	Rye bran and rye middlings.	As certified,	3860
3.20	....	3.83	....	26 00	Rye feed,	As certified,	3880
3.23	....	4.42	....	1 35	Rye feed,	As certified,	4521
3.33	....	4.13	....	28 33			
5.38	4.50-5	5.30	4-4.50	1 60	Wheat and rye middlings,	As certified,	4783
5.40	3-4	7.55	6-10	1 45	Wheat and rye red middlings.	As certified,	4894
3.90	4-6	4.57	5-10	1 70	Wheat and rye "W" middlings.	As certified,	4895
4.20	4-6	4.47	5-10	1 55	Wheat and rye "W" middlings.	As certified,	4773
3.85	4-6	4.22	5-10	1 50	Wheat and rye "W" middlings.	As certified,	4906
4.54	....	5.22	....	31 20			
5.60	....	8.05	....	1 50	Pure and unadulterated wheat and rye bran.	As certified,	4333
4.53	4.50	7.52	9.50	1 40	Wheat and rye bran,	As certified,	4727
4.88	3-4	10.02	6-10	1 45	Wheat and rye bran,	As certified,	4893
4.97	....	8.53	....	29 00			
8.58	....	3.31	......	32 00	....	Buckwheat middlings.	3822
4.15	3.00	25.07	29.00	1 20	Pure buckwheat feed,	As certified,	3861
4.90	....	21.56	....	16 00	....	Buckwheat feed,	3814
3.51	....	27.28	....	23 00	Buckwheat,	As certified,	3797

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
3792	------ Dayton Milling Co., Towanda, Pa.	Towanda, Dayton Milling Co.	92	11.06	16.38	--------
3891	------ Port Allegany Milling Co., Port Allegany, Pa.	Port Allegany, Port Allegany Milling Co.	191	11.27	16.13	--------
		Average, ----------------	--------	11.07	15.81	--------
	ALFALFA MEALS.					
4266	Acme, American Alfalfa Food Co., Wichita, Kans.	West Chester, E. D. Hemphill.	566	7.75	14.44	14.00
4113	------ American Milling Co., Chicago, Ill.	Lancaster, John W. Eshelman.	413	7.09	18.75	--------
5089	Briggs Pure, Clarence S. Briggs, Fowler, Colo.	Pottstown, W. H. Saylor & Son.	1389	6.74	13.06	12-14
4239	Great Western, The Great Western Cereal Co., Chicago, Ill.	Coatesville, J. T. Gay & Son.	539	8.40	16.44	12.00
4987	Great Western, The Great Western Cereal Co., Chicago, Ill.	Mercer, I. J. Pizor & Son.	1287	6.85	15.44	12.00
4706	Great Western, The Great Western Cereal Co., Chicago, Ill.	Philipsburg, Wolf's Mill, --	1006	7.67	17.19	14.00
4723	H. & S., Dwight E. Hamlin & Co., Pittsburg, Pa.	Osceola Mills, Brown, Baird & Reeve.	1023	*13.73	*14.38	16.00
3757	------ Hunter Bros., Milling Co., St. Louis, Mo.	Johnstown, McDermott, Wertz & Co.	57	7.07	11.10	--------
5098	Pure, The Kansas Pure Alfalfa Milling Co., Wichita, Kans.	Chester, Chester Milling Co.	1398	7.68	16.44	16.00
4048	Pure, The Kansas Pure Alfalfa Milling Co., Wichita, Kans.	Monessen, J. H. Farquhar,	348	7.09	12.81	16.00
4914	Pioneer, Kornfalfa Feed Milling Co., Kansas City, Mo.	Nanticoke, Bergin & Co.,-	1214	6.24	14.35	15.00
4951	Pioneer, Kornfalfa Feed Milling Co., Kansas City, Mo.	Butler, H. J. Klingler & Co.	1251	6.58	15.06	15.00
5017	"Lucern," M. C. Peters Mill Co., Omaha, Neb.	Oil City, New Model Milling Co.	1317	7.30	16.13	12.00
4776	------ The Quaker Oats Co., Chicago, Ill.	Mt. Carmel, Schnieder Bros.	1076	8.78	12.75	14.00
4756	Square Deal, Russell Grain Co., Kansas City, Mo.	Sunbury, Blank & Gottshall.	1056	6.96	14.50	12.00
3975	Square Deal, Russell Grain Co., Kansas City, Mo.	Greensburg, McFarland Supply Co.	275	6.90	12.25	14.00
4010	------ Salina Alfalfa Meal Co., Salina, Kans.	Scottdale, J. E. Pritts, ---	310	7.42	13.94	--------
3752	------ Joe A. Stahl Hay Co., Kansas City, Kans.	Johnstown, Swope Bros.,	52	8.30	15.69	--------
3743	Alfalfa Clover, Swope Bros., Johnstown, Pa.	Johnstown, J. Thomas & Sons.	43	9.31	15.44	--------
4928	------ Unknown, ------------	Scranton, Miner-Hillard Milling Co.	1228	7.49	14.75	--------
		Average, ----------------	--------	7.45	14.76	--------
4042	June Pasture Dairy Meal, M. C. Peters Mill Co., Omaha, Neb.	Charleroi, R. C. Mountser.	342	18.21	11.81	10.00
5016	June Pasture Dairy Meal, M. C. Peters Mill Co., Omaha, Neb.	Oil City, New Model Milling Co.	1316	15.09	11.86	10.00
4056	Peters' Alfal-Fat Sugar Meal, M. C. Peters Mill Co., Omaha, Neb.	Pittsburg, I. W. Scott Co.,	356	15.35	13.04	10.00

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*Excluded from average.

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
4.35	--------	24.44	--------	$22 00	--------	Buckwheat feed, -----	3792
4.43	--------	18.83	--------	1 30	Buckwheat, --------	As certified, --------	3891
4.27	--------	23.44	--------	23 00			
2.20	1.92	29.79	13-17	28 00	--------	Alfalfa meal, --------	4266
3.05	--------	23.37	--------	30 00	--------	Alfalfa meal, --------	4113
1.65	1.50-2	33.80	31-34	1 50	--------	Alfalfa meal, --------	5089
2.35	2.00	27.77	24.00	1 45	Prime alfalfa meal, ------	As certified, --------	4239
1.95	2.00	32.48	30.00	1 40	Made from prime alfalfa,	As certified, --------	4987
2.08	2.00	25.42	24.00	1 50	Prime alfalfa, --------	As certified, --------	4706
*3.83	3.50	*12.60	16.00	*2 60	Alfalfa, molasses, and brewers' grains.	As certified, --------	4723
2.52	--------	34.83	--------	1 30	--------	Alfalfa meal, --------	3757
2.30	2.02	26.00	--------	1 60	Pure alfalfa meal, ------	As certified, --------	5098
2.25	2.02	33.85	--------	1 25	Pure alfalfa meal, ------	As certified, --------	4048
1.75	2.00	34.92	22.00	1 50	--------	Alfalfa meal, --------	4914
2.00	2.00	29.58	22.00	1 60	--------	Alfalfa meal, --------	4951
2.20	2.00	29.12	33.00	24 00	Alfalfa meal, --------	As certified, --------	5017
2.15	2.00	32.17	42.00	1 50	--------	Alfalfa meal, --------	4776
2.15	1.50	31.28	25.00	1 50	--------	Alfalfa meal, --------	4756
2.48	1.50	34.11	25.00	1 30	--------	Alfalfa meal, --------	3975
2.50	--------	29.85	--------	28 00	Pure alfalfa meal, ------	As certified, --------	4010
3.13	--------	25.77	--------	1 50	--------	Alfalfa meal, --------	3752
3.90	--------	24.96	--------	1.65	--------	Alfalfa meal, --------	3743
2.00	--------	30.92	--------	27 00	--------	Alfalfa meal, --------	4928
2.35	--------	29.99	--------	29 00			
1.65	0.50	17.47	26.00	1 60	Pure ground alfalfa and fine syrup.	As certified, --------	4042
1.15	0.50	19.38	26.00	28 00	Pure ground alfalfa and fine syrup.	As certified, --------	5016
1.54	0.50	12.20	26.00	30 25	Alfalfa and syrup, ------	As certified, --------	4056

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
4054	June Pasture Dairy Meal, M. C. Peters Mill Co., Omaha, Neb.	Pittsburg, I. W. Scott Co.,	354	12.95	14.35	10.00
4222	June Pasture Dairy Meal, M. C. Peters Mill Co., Omaha, Neb.	York, Strayer Bros. Co.,	522	15.39	13.58	10.00
		Average, ...	....	15.39	12.88	....
	BEET PULP.					
3753	...... The Larrowe Milling Co., Detroit, Mich.	Johnstown, G. Bostert & Son.	53	5.09	9.25	8.00
4424	...... The Larrowe Milling Co., Detroit, Mich.	Mechanicsburg, A. B. Harnish.	724	7.75	9.06	8.00
3967	...... The Larrowe Milling Co., Detroit, Mich.	Latrobe, Latrobe Wholesale Grocery Co.	267	7.84	9.31	8.00
3800	...... The Larrowe Milling Co., Detroit, Mich.	Ulster, P. C. Pierce, ...	100	6.59	8.94	8.00
5121	...... The Larrowe Milling Co., Detroit, Mich.	Windber, Weaver & Berkey.	1421	6.45	8.13	8-10
4250	...... The Larrowe Milling Co., Detroit, Mich.	Downingtown, Wells & Walker.	550	6.90	9.25	8.00
4178	...... The Larrowe Milling Co., Detroit, Mich.	Elizabethtown, A. W. Martin.	478	6.50	9.06	8.00
3706	...... Owosso Sugar Co., Owosso, Mich.	Blairsville, George J. New,	6	7.22	8.63	8.00
3744	...... Owosso Sugar Co., Owosso, Mich.	Johnstown, J. Thomas & Sons.	44	6.85	9.25	8.00
3721	...... Owosso Sugar Co., Owosso, Mich.	Indiana, James St. Clair,	21	7.87	8.69	8-10
3748	...... Owosso Sugar Co., Owosso, Mich.	Johnstown, Swope Bros.,	48	8.19	8.81	8.00
		Average, ...	....	6.97	8.94	....
	MIXED FEEDS.					
	Proprietary Dairy and Stock Feeds.					
3882	Acme Feed, Acme Milling Co., Olean, N. Y.	Coudersport, Gates Bros.,	182	11.94	8.88	7.00
3856	Acme Feed, Acme Milling Co., Olean, N. Y.	Westfield, H. Z. Pride & Son.	156	10.50	8.44	7.00
		Average, ...	....	11.22	8.66	....
4629	Dairy Feed, Altoona Feed Mills, Altoona, Pa.	Altoona, Altoona Feed Mills.	929	10.17	7.63	8-9
4385	Sucrene Dairy Feed, American Milling Co., Chicago, Ill.	Shippensburg, Allison & Fogelsonger.	685	10.90	15.93	16.50
4641	Sucrene Dairy Feed, American Milling Co., Chicago, Ill.	Altoona, Central Feed Co.,	941	10.24	15.64	16.50

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
2.30	0.50	15.56	26.00	$30 00	**Pure ground alfalfa and fine syrup.**	As certified, ...	4054
1.42	0.50	15.74	26.00	1 50	**Pure ground alfalfa and fine syrup.**	As certified, ...	4222
1.61	--------	16.07	--------	30 05			
0.80	0.50	18.09	20.00	25 00	Residue of sugar beets, --	As certified, ...	3758
1.10	0.50	17.72	20.00	25.00	Residue of sugar beets dried.	As certified, ...	4424
1.30	0.50	18.40	20.00	26 00	Residue of sugar beets, --	As certified, ...	3967
1.45	0.50	18.42	20.00	1 30	Residue of sugar beets, --	As certified, ...	3800
1.30	0.5–1	18.70	17.50	1 15	--------------------------	Dried beet pulp, ...	5121
1.28	0.50	17.16	20.00	25 00	Residue of sugar beets dried.	As certified, ...	4250
1.03	0.50	15.34	20.00	25 00	Residue of sugar beets mixed with molasses and dried.	As certified, ...	4178
1.13	0.50	13.95	20.00	27 00	Residue of sugar beets, --	As certified, ...	3706
1.10	0.50	18.30	20.00	1 38	Residue of sugar beets, --	As certified, ...	3744
1.30	0.5–1	19.67	17.50	1 35	--------------------------	Dried beet pulp, ...	3721
0.93	0.50	19.06	20.00	28 00	Residue of sugar beets, --	As certified, ...	3748
1.16	--------	17.71	--------	25 87			
4.35	3.00	6.06	9.00	1 50	Corn, hominy and oat hulls.	As certified, ...	3882
4.95	3.00	7.22	9.00	30 00	Corn, hominy and oat hulls.	As certified, ...	3856
4.65	--------	6.64	--------	30 00			
3.25	4–5	7.95	9.00	1 55	Corn, oat middlings, oat hulls.	As certified, ...	4629
5.06	3.50	12.28	12.00	26 00	Cottonseed meal, oats, barley, wheat, malt sprouts, grain screenings, molasses and ½ of 1 per cent. salt.	Cottonseed meal, oats, barley, wheat, malt sprouts, grain screenings, molasses, salt and small amount of weed seeds.	4385
4.38	3.50	13.01	12.00	1 50	Cottonseed meal, oats, barley, wheat, malt sprouts, molasses and mixed broken grains from wheat, oats, buckwheat and barley screenings and ½ of 1 per cent. salt.	Cottonseed meal, oats, barley, wheat, malt sprouts, mixed broken grains from wheat, oats, buckwheat, and barley screenings, molasses, salt and small amount of weed seeds.	4641

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
4833	Sucrene Dairy Feed, American Milling Co., Chicago, Ill.	Danville, Danville Milling Co.	1133	12.96	15.15	16.50
4784	Sucrene Dairy Feed, American Milling Co., Chicago, Ill.	Milton, E. Datesman, ...	1084	11.57	15.81	16.50
4030	Sucrene Dairy Feed, American Milling Co., Chicago, Ill.	McKeesport, A. Davison,..	330	12.04	15.47	16.50
4377	Sucrene Dairy Feed, American Milling Co., Chicago, Ill.	Chambersburg, Diehl, Omwake & Diehl.	677	9.91	16.34	16.50
5124	Sucrene Dairy Feed, American Milling Co., Chicago, Ill.	Somerset, John G. Emert,	1424	13.02	15.39	16.50
4130	Sucrene Dairy Feed, American Milling Co., Chicago, Ill.	Lancaster, Esbenshade & Co.	430	10.61	15.11	16.50
4112	Sucrene Dairy Feed, American Milling Co., Chicago, Ill.	Lancaster, John W. Eshelman.	412	11.59	17.05	16.50
4034	Sucrene Dairy Feed, American Milling Co., Chicago, Ill.	Monongahela, D. E. Gamble.	334	12.93	15.19	16.50
3718	Sucrene Dairy Feed, American Milling Co., Chicago, Ill	Homer City, A. George & Son.	18	11.43	16.24	16.50

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
4.30	3.50	12.72	12.00	$25 00	Cottonseed meal, oats, barley, wheat, malt sprouts, molasses and mixed broken grains from wheat, oats, buckwheat and barley screenings and ¼ of 1 per cent. salt.	Cottonseed meal, oats, barley, wheat, malt sprouts, mixed broken grains from wheat, oats, buckwheat and barley screenings, molasses, salt and small amount of weed seeds.	4833
5.28	3.50	12.77	12.00	1 45	Cottonseed meal, oats, barley, wheat, malt sprouts, grain screenings, molasses and ¼ of 1 per cent. salt.	Cottonseed meal, oats, barley, wheat, malt sprouts, grain screenings, molasses, salt and considerable proportion of weed seeds.	4784
4.35	3.50	12.22	12.00	28 00	Cottonseed meal, oats, barley, wheat, grain screenings, malt sprouts, molasses and ¼ of 1 per cent. salt.	Cottonseed meal, oats, barley, wheat, grain screenings, malt sprouts, molasses, salt and small amount of weed seeds.	4080
5.61	3.50	12.62	12.00	26 00	Cottonseed meal, oats, barley, wheat, grain screenings, malt sprouts, molasses and ¼ of 1 per cent. salt.	Cottonseed meal, oats, barley, wheat, grain screenings, malt sprouts, molasses, salt and small amount of weed seeds.	4377
3.74	3.50	11.99	12.00	28 00	Cottonseed meal, oats, barley, wheat, malt sprouts, molasses and mixed broken grains from wheat, oats, buckwheat and barley screenings and ¼ of 1 per cent. salt.	Cottonseed meal, oats, barley, wheat, malt sprouts, mixed broken grains from wheat, oats, buckwheat and barley screenings, molasses, salt and small amount of weed seeds.	5124
6.07	3.50	12.29	12.00	26.50	Cottonseed meal, oats, barley, wheat, grain screenings, malt sprouts, molasses and ¼ of 1 per cent. salt.	Cottonseed meal, oats, barley, wheat, grain screenings, malt sprouts, molasses, salt and considerable proportion of weed seeds.	4130
5.53	3.50	12.86	12.00	26 00	Cottonseed meal, oats, barley, wheat, grain screenings, malt sprouts, molasses and ¼ of 1 per cent. salt.	Cottonseed meal, oats, barley, wheat, grain screenings, malt sprouts, molasses, salt and considerable proportion of weed seeds.	4112
4.29	3.50	11.22	12.00	25 00	Cottonseed meal, oats, barley, wheat, malt sprouts, grain screenings, molasses and ¼ of 1 per cent. salt.	Cottonseed meal, oats, barley, wheat, malt sprouts, grain screenings, molasses, salt and large amount of weed seeds.	4084
5.55	3.50	12.23	12.00	26 00	Cottonseed meal, oats, barley, wheat, grain screenings, molasses and ¼ of 1 per cent. salt.	Cottonseed meal, oats, barley, wheat, grain screenings, molasses, salt and considerable proportion of weed seeds.	3718

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
4241	Sucrene Dairy Feed, American Milling Co., Chicago, Ill.	Coatesville, P. D. Handwork Co.	541	9.75	16.70	16.50
5135	Sucrene Dairy Feed, American Milling Co., Chicago, Ill.	Washington, D. P. Hart,	1435	10.01	16.58	16.50
4265	Sucrene Dairy Feed, American Milling Co., Chicago, Ill.	West Chester, E. D. Hemphill.	565	10.25	16.25	16.50
4145	Sucrene Dairy Feed, American Milling Co., Chicago, Ill.	Leaman Place, Harry K. Hershey.	445	10.69	16.43	16.50
4302	Sucrene Dairy Feed, American Milling Co., Chicago, Ill.	Brookville, Klines Sifter Mills.	602	11.27	16.30	16.50
4150	Sucrene Dairy Feed, American Milling Co., Chicago, Ill.	Manheim, F. K. Nauman,	450	11.29	16.03	16.50
3712	Sucrene Dairy Feed, American Milling Co., Chicago, Ill.	Saltsburg, Patterson Milling Co.	12	12.95	14.64	16.50
3830	Sucrene Dairy Feed, American Milling Co., Chicago, Ill.	Canton, Homer Rockwell,	130	9.86	16.19	16.50
5088	Sucrene Dairy Feed, American Milling Co., Chicago, Ill.	Pottstown, W. H. Saylor & Son.	1388	10.83	15.22	16.50
4586	Sucrene Dairy Feed, American Milling Co., Chicago, Ill.	Fleetwood, Schaeffer, Wanner & Co.	828	8.84	17.96	16.50

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
	Per ct.	Per ct.	Per ct.				
5.12	3.50	10.00	12.00	$26 00	Cottonseed meal, oats, barley, wheat, malt sprouts, grain screenings, molasses and ½ of 1 per cent. salt.	Cottonseed meal, oats, barley, wheat, malt sprouts, grain screenings, molasses, salt and weed seeds.	4241
4.79	3.50	11.58	12.00	24 50	Cottonseed meal, oats, barley, wheat, malt sprouts, molasses and mixed broken grains from wheat, oat, buckwheat and barley screenings and ½ of 1 per cent. salt.	Cottonseed meal, oats, barley, wheat, malt sprouts and mixed broken grains from wheat, oat, buckwheat and barley screenings, molasses, salt and small amount of weed seeds.	5135
5.21	3.50	14.09	12.00	26 00	Cottonseed meal, oats, barley, wheat, grain screenings, malt sprouts, molasses and ½ of 1 per cent. salt.	Cottonseed meal, oats, barley, wheat, grain screenings, malt sprouts, molasses, salt and small amount of weed seeds.	4265
6.16	3.50	13.45	12.00	27 00	Cottonseed meal, oats, barley, wheat, malt sprouts, grain screenings, molasses and ½ of 1 per cent. salt.	Cottonseed meal, oats, barley, wheat, malt sprouts, grain screenings, molasses, salt and considerable proportion of weed seeds.	4145
4.81	3.50	11.76	12.00	28 00	Cottonseed meal, oats, barley, wheat, grain screenings, malt sprouts, molasses and ½ of 1 per cent. salt.	Cottonseed meal, oats, barley, wheat, grain screenings, malt sprouts, molasses, salt and small amount of weed seeds.	4302
4.74	3.50	12.35	12.00	26 50	Cottonseed meal, oats, barley, wheat, grain screenings, malt sprouts, molasses and ½ of 1 per cent. salt.	Cottonseed meal, oats, barley, wheat, grain screenings, malt sprouts, molasses, salt and considerable proportion of weed seeds.	4150
4.90	3.50	11.59	12.00	26 00	Cottonseed meal, oats, barley, wheat, malt sprouts, grain screenings, molasses and ½ of 1 per cent. salt.	Cottonseed meal, oats, barley, wheat, malt sprouts, grain screenings, molasses, salt and considerable proportion of weed seeds.	3712
6.38	3.50	12.40	12.00	27 00	Cottonseed meal, oats, barley, wheat, malt sprouts, grain screenings, molasses and ½ of 1 per cent. salt.	Cottonseed meal, oats, barley, wheat, malt sprouts, grain screenings, molasses, salt and weed seeds.	3830
4.79	3.50	13.47	12.00	1 30	Cottonseed meal, oats, barley, wheat, malt sprouts, grain screenings, molasses and ½ of 1 per cent. salt.	Cottonseed meal, oats, barley, wheat, malt sprouts, grain screenings, molasses, salt, trace of flax seed and weed seeds.	5088
4.30	3.50	11.56	12.00	1 35	Cottonseed meal, oats, barley, wheat, malt sprouts, grain screenings, molasses and ½ of 1 per cent. salt.	Cottonseed meal, oats, barley, wheat, malt sprouts, grain screenings, molasses, salt and small amount of weed seeds.	4528

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
4532	Sucrene Dairy Feed, American Milling Co., Chicago, Ill.	Allentown, Geo. B. Shelly Est.	832	10.06	17.50	16.50
4670	Sucrene Dairy Feed, American Milling Co., Chicago, Ill.	Martinsburg, Skyles, Miller & Co.	970	10.19	15.66	16.50
3701	Sucrene Dairy Feed, American Milling Co., Chicago, Ill.	Blairsville, Smith & McKelvey.	1	13.79	15.83	16.50
4811	Sucrene Dairy Feed, American Milling Co., Chicago, Ill.	Mifflinburg, T. E. Spiegelmeyer.	1111	12,26	16,99	16.50
4694	Sucrene Dairy Feed, American Milling Co., Chicago, Ill.	Tyrone, Tyrone Fuel and Supply Co.	994	10.16	16.79	16.50
5052	Sucrene Dairy Feed, American Milling Co., Chicago, Ill.	Union City, Union Coal and Supply Co.	1352	10.70	14.26	16.50
3991	Sucrene Dairy Feed, American Milling Co., Chicago, Ill.	Irwin, T. F. Wilson & Co.	291	11.00	17.03	16.50
4802	Sucrene Dairy Feed, American Milling Co., Chicago, Ill.	Lewisburg, Wolfe & Shultz,	1102	11.21	16.02	16.50
		Average,	....	11.09	16.06	....

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
5.18	3.50	12.15	12.00	$27 00	Cottonseed meal, oats, barley, wheat, grain screenings, malt sprouts, molasses and ½ of 1 per cent. salt.	Cottonseed meal, oats, barley, wheat, grain screenings, malt sprouts, molasses, salt and considerable proportion of weed seeds.	4532
4.22	3.50	12.62	12.00	25 00	Cottonseed meal, oats, barley, wheat, malt sprouts, molasses and mixed broken grain from wheat, oat, buckwheat and barley screenings and ½ of 1 per cent. salt.	Cottonseed meal, corn, oats, barley, wheat, malt sprouts, mixed broken grains from wheat, oat, buckwheat and barley screenings, molasses, salt and small amount of weed seeds.	4670
5.14	3.50	11.89	12.00	27 00	Cottonseed meal, oats, barley, wheat, malt sprouts, grain screenings, molasses and ½ of 1 per cent. salt.	Cottonseed meal, oats, barley, wheat, malt sprouts, grain screenings, molasses, salt and considerable proportion of weed seeds.	3701
5.29	3.50	12.13	12.00	1 45	Cottonseed meal, oats, barley, wheat, grain screenings, malt sprouts, molasses and ½ of 1 per cent. salt.	Cottonseed meal, oats, barley, wheat, grain screenings, malt sprouts, molasses, salt and small amount of weed seeds.	4811
5.00	3.50	12.85	12.00	25 00	Cottonseed meal, oats, barley, wheat, malt sprouts, molasses and mixed broken grains grains from wheat, oat, buckwheat and barley screenings and ½ of 1 per cent. salt.	Cottonseed meal, oats, barley, wheat, malt sprouts, mixed, broken grains from wheat, oat, buckwheat and barley screenings, molasses, salt and small amount of weed seeds.	4694
3.55	3.50	12.38	12.00	1 25	Cottonseed meal, oats, barley, wheat, malt sprouts, molasses and mixed broken grains from wheat, oat, buckwheat and barley screenings and ½ of 1 per cent. salt.	Cottonseed meal, oats, barley, wheat, malt sprouts, mixed broken grains from wheat, oat, buckwheat and barley screenings, molasses, salt and trace of weed seeds.	5052
4.64	3.50	11.11	12.00	25.50	Cottonseed meal, oats, barley, wheat, malt sprouts, grain screenings, molasses and ½ of 1 per cent. salt.	Cottonseed meal, oats, barley, wheat, malt sprouts, grain screenings, molasses, salt and small amount of weed seeds.	3991
5.23	3.50	12.72	12.00	26 00	Cottonseed meal, oats, barley, wheat, malt sprouts, grain screenings, molasses and ½ of 1 per cent. salt.	Cottonseed meal, oats, barley, wheat, malt sprouts, grain screenings, molasses, salt and considerable proportion of weed seeds.	4802
4.97	....	12.28	....	25 69			

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
4381	Sucrene Stock Feed, American Milling Co., Chicago, Ill.	Shippensburg, Allison & Fogelsonger.	681	10.61	9.69	10.00
4698	Sucrene Stock Feed, American Milling Co., Chicago, Ill.	Tyrone, Tyrone Fuel and Supply Co.	998	8.11	12.13	10.00
		Average,		9.36	10.91	
3839	Ubiko Union Grains, Biles Ready Rations, The J. W. Biles Co., Cincinnati, O.	Wellsboro, Geo. C. and F. A. Brooks.	189	7.00	24.94	24.00
5040	Ubiko Union Grains, Biles Ready Dairy Rations, The J. W. Biles Co., Cincinnati, O.	Titusville, L. S. Clark,	1340	6.92	23.94	24.00
4036	Ubiko Union Grains, Biles Ready Dairy Rations, The J. W. Biles Co., Cincinnati, O.	Monongahela, D. E. Gamble.	336	7.57	25.19	24.00
4530	Ubiko Union Grains, Biles Ready Dairy Rations, The J. W. Biles Co., Cincinnati, O.	Allentown, George B. Shelly Est.	880	7.25	25.94	24.00
4486	Ubiko Union Grains, Biles Ready Dairy Rations, The J. W. Biles Co., Cincinnati, O.	Reading, Aug. O. Wertz & Bro.	786	7.00	24.26	24.00
		Average,		7.14	24.85	
3845	Unicorn Dairy Rations, Chapin & Co., Buffalo, N. Y.	Wellsboro, Geo. C. and F. A. Brooks.	145	6.51	26.50	26.00

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
2.57	3.50	9.22	13.50	$30 00	Corn, oats, barley, wheat, buckwheat, linseed meal and ½ of 1 per cent. salt.	As certified, ...	4381
3.23	3.50	11.17	13.50	30 00	Corn, oats, barley, wheat, buckwheat, linseed meal and ½ of 1 per cent. salt.	As certified, ...	4698
2.90	....	10.19	....	30 00			
8.35	7.00	9.35	9.00	34 00	Fourex distillers dried grains, choice cottonseed meal, old process linseed meal, white wheat middlings, winter wheat bran, hominy meal, barley malt sprouts and ¾ of 1 per cent. salt.	As certified, ...	3839
7.68	7.00	9.87	9.00	1 70	Fourex distillers dried grains, choice cottonseed meal, old process linseed meal, white wheat middlings, winter wheat bran, hominy meal, barley malt sprouts and ¾ of 1 per cent. salt.	As certified, ...	5040
8.40	7.00	9.60	9.00	1 75	Fourex distillers dried grains, choice cottonseed meal, old process linseed meal, white wheat middlings, winter wheat bran, hominy meal, barley malt sprouts and ¾ of 1 per cent. salt.	As certified, ...	4036
8.20	7.00	9.65	9.00	34 00	Fourex distillers dried grains, choice cottonseed meal, old process linseed meal, white wheat middlings, winter wheat bran, hominy meal, barley malt sprouts and ¾ of 1 per cent. salt.	As certified, ...	4530
8.13	7.00	9.90	9.00	33 00	Fourex distillers dried grains, choice cottonseed meal, old process linseed meal, white wheat middlings, winter wheat bran, hominy meal, barley malt sprouts and ¾ of 1 per cent. salt.	As certified, ...	4486
8.15	....	9.67	....	34 00			
[illegible].83	6.00	9.31	9-10	34 00	Ajax flakes (distillers feed), green diamond cottonseed meal, green diamond hominy, wheat or corn, gluten feed, barley feed and sprouts, pure wheat bran, guaranteed free from salt, molasses, screenings, or weed seeds.	As certified, ...	3845

TABLE IX.--ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
5070	Unicorn Dairy Rations, Chapin & Co., Buffalo, N. Y.	Erie, W. J. Carroll, ...	1370	7.44	24.56	26.00
4058	Unicorn Dairy Rations, Chapin & Co., Buffalo, N. Y.	Pittsburg, The I. W. Scott Co.	358	7.90	26.19	26.00
5054	Unicorn Dairy Rations, Chapin & Co., Buffalo, N. Y.	Union City, Union Coal and Supply Co.	1354	7.11	25.81	26.00
		Average, ...	....	7.24	25.77	....
4136	Crystaloid Dairy Feed, Jonas F. Eby & Son, Lancaster, Pa.	Lititz, Elmer Eby, ...	436	10.83	16.52	16.50
4129	Crystaloid Dairy Feed, Jonas F. Eby & Son, Lancaster, Pa.	Lancaster, Esbenshade & Co.	429	11.70	15.42	16.50
4225	Crystaloid Dairy Feed, Jonas F. Eby & Son, Lancaster, Pa.	Hanover, Hanover Feed & Coal Co.	525	11.67	15.51	16.50
4153	Crystaloid Dairy Feed, Jonas F. Eby & Son, Lancaster, Pa.	Manheim, B. R. Hollinger.	453	12.66	16.08	16.50
4204	Crystaloid Dairy Feed, Jonas F. Eby & Son, Lancaster, Pa.	York, Mitzel & Sloat, ...	504	10.07	15.51	16.50
4160	Crystaloid Dairy Feed, Jonas F. Eby & Son, Lancaster, Pa.	Ephrata, S. M. Seldomridge.	460	9.76	18.46	16.50
		Average, ...	....	11.11	16.24	....

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
6.75	5.50–6.50	8.92	9-10	$32 00	Distillers feed, green diamond cottonseed meal, green diamond hominy, wheat or corn, gluten feed, barley feed and sprouts and pure wheat bran.	As certified, ...	5070
6.00	5.50–6.50	9.25	9-10	35 50	Distillers feed, green diamond cottonseed meal, green diamond hominy, wheat or corn, gluten feed, barley feed and sprouts, pure wheat bran and free from salt, molasses, screenings or weed seeds.	As certified, ...	4058
7.10	5.50–6.50	8.77	9-10	1 65	Distillers feed, green diamond cottonseed meal, green diamond hominy, wheat or corn, gluten feed, barley feed and sprouts and pure wheat bran.	As certified, ...	5054
6.92	....	9.06	....	33 63			
6.03	3.50	12.74	12.00	25 50	Cottonseed meal, oats, barley, wheat, grain screenings, malt sprouts, molasses and ½ of 1 per cent. salt.	Cottonseed meal, oats, barley, wheat, grain screenings, malt sprouts, molasses, salt, chaff and small amount of weed seeds.	4136
6.60	3.50	12.37	12.00	26 50	Grain screenings, oats, molasses, cottonseed meal and ½ of 1 per cent. salt.	Cottonseed meal, oats, grain screenings, molasses, salt, chaff and small amount of weed seeds.	4129
4.75	3.50	12.98	12.00	26 00	Cottonseed meal, oats, barley, wheat, grain screenings, malt sprouts, molasses and ½ of 1 per cent. salt.	Cottonseed meal, oats, barley, wheat, grain screenings, malt sprouts, trace of corn, molasses, salt, chaff and large amount of weed seeds.	4225
4.86	3.50	11.49	12.00	25 00	Cottonseed meal, oats, barley, wheat, grain screenings, malt sprouts, molasses and ½ of 1 per cent. salt.	Cottonseed meal, oats, barley, wheat, grain screenings, malt sprouts, molasses, salt, chaff and small amount of weed seeds.	4158
5.35	3.50	13.01	12.00	26 00	Cottonseed meal, oats, barley, wheat, grain screenings, malt sprouts, molasses and ½ of 1 per cent. salt.	Cottonseed meal, oats, barley, wheat, grain screenings, malt sprouts, molasses, salt, chaff and weed seeds.	4204
6.01	3.50	11.16	12.00	25 00	Cottonseed meal, oats, barley, wheat, grain screenings, malt sprouts, molasses and ½ of 1 per cent. salt.	Cottonseed meal, oats, barley, wheat, grain screenings, malt sprouts, molasses, salt, chaff and small amount of weed seeds.	4160
5.60	....	12.29	....	25 67			

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
3894	Emporium Feed, Emporium Milling Co., Emporium, Pa.	Emporium, Emporium Milling Co.	194	10.64	8.94	7.65
4698	No. 1 Mixed Feed, Feed Grain Co., Philipsburg, Pa.	Philipsburg, Feed Grain Co.	998	9.79	11.88	6–8
3847	Dairy Mixed Feed, Globe Elevator Co., Buffalo, N. Y.	Wellsboro, Max Bernkoff,	147	10.83	14.00	11–12
3850	Globe Mill Feed, Globe Elevator Co., Buffalo, N. Y.	Wellsboro, Max Bernkoff,	150	11.40	15.88	10–12
4372	Good Luck Feed, Good Luck Mills, St. Louis, Mo.	Chambersburg, George Walker.	672	9.63	12.04	12.00
4580	Boss Feed, The Great Western Cereal Co., Chicago, Ill.	Madpleton Depot, H. O. Andrews.	880	9.85	9.19	8.00
4474	Boss Feed, The Great Western Cereal Co., Chicago, Ill.	Myerstown, E. L. Bleistein.	774	10.42	8.88	8.00
4456	Boss Feed, The Great Western Cereal Co., Chicago, Ill.	Lebanon, City Flouring Mills.	756	9.23	8.63	8.00
4027	Boss Chop Feed, The Great Western Cereal Co., Chicago, Ill.	McKeesport, A. Davison,--	327	10.80	8.13	8.00
4596	Boss Chop Feed, The Great Western Cereal Co., Chicago, Ill.	Bedford, N. M. Diehl. -----	896	9.27	9.25	8.00
4237	Boss Feed, The Great Western Cereal Co., Chicago, Ill.	Coatesville, J. T. Gay & Son.	537	9.52	9.19	8.00
4132	Boss Chop Feed, The Great Western Cereal Co., Chicago, Ill.	Lititz, Aaron G. Hershey,	432	10.00	9.06	8.00
4232	Boss Feed. The Great Western Cereal Co., Chicago, Ill.	Hanover, Geo. Hull & Sons.	532	10.00	8.13	8.00
4068	Boss Chop Feed, The Great Western Cereal Co., Chicago, Ill.	Leechburg, Leechburg Flouring Mill.	368	10.24	8.75	8.00
4365	Boss Feed, The Great Western Cereal Co., Chicago, Ill.	Waynesboro, J. M. Newcomer & Co.	665	8.37	8.88	8.00

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
4.60	2.97	8.70	9.00	$30 00	Corn, hominy, oats, oat hulls and oat middlings.	As certified, ...	3894
5.30	4-6	3.80	9.00	1 80	Ear corn, corn, oats and oat hulls, rye, wheat middlings, hominy meal, red dog and salt.	As certified, ...	4698
4.08	3.00	7.88	15-16	1 50	....	Wheat bran and wheat middlings.	3847
3.50	2-4	3.17	12-14	1 65	....	Wheat bran and wheat middlings.	3850
4.55	3.50	10.20	9.70	1 40	Corn, oats, dried brewers' grains, hominy feed, ground alfalfa and salt guaranteed ¾ of 1 per cent. salt.	As certified, ...	4372
5.20	3.50	7.47	9.00	1 45	Corn, hominy feed, oats, oat middlings, oat hulls and oat shorts. Maximum salt ¾ of 1 per cent.	As certified, ...	4580
5.30	3.50	5.85	9.00	27 00	Corn, hominy feed, oats, oat middlings, oat hulls and oat shorts. Maximum salt ¾ of 1 per cent.	As certified, ...	4474
5.00	3.50	9.97	9.00	28 00	Corn, hominy feed, oats, oat middlings, oat hulls and oat shorts. Maximum salt ¾ of 1 per cent.	As certified, ...	4456
4.10	3.50	7.51	9.00	30 00	Corn, hominy feed, oats, oat middlings, oat hulls and oat shorts. Maximum salt ¾ of 1 per cent.	As certified, ...	4027
4.63	3.50	8.65	9.00	1 40	Corn, hominy feed, oats, oat middlings, oat hulls and oat shorts. Maximum salt ¾ of 1 per cent.	As certified.	4595
4.65	3.50	7.15	9.00	1 50	Corn, hominy feed, oats, oat middlings, oat hulls and oat shorts. Maximum salt ¾ of 1 per cent.	As certified, ...	4237
5.40	3.50	8.85	9.00	29 00	Corn, hominy feed, oats, oat middlings, oat hulls and oat shorts. Maximum salt ¾ of 1 per cent.	As certified, ...	4132
4.35	3.50	8.95	9.00	31 00	Corn, hominy feed, oats, oat middlings, oat hulls and oat shorts. Maximum salt ¾ of 1 per cent.	As certified, ...	4232
4.20	3.50	6.01	9.00	28 00	Corn, hominy feed, oats, oat middlings, oat hulls and oat shorts. Maximum salt ¾ of 1 per cent.	As certified, ...	4068
5.05	3.50	9.22	9.00	30 00	Corn, hominy feed, oats, oat middlings, oat hulls and oat shorts. Maximum salt ¾ of 1 per cent.	As certified, ...	4365

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
4705	Boss Feed. The Great Western Cereal Co., Chicago, Ill.	Philipsburg, Wolf's Mill,	1005	9.40	9.13	8.00
		Average,		9.73	8.84	
4877	Daisy Dairy Feed, The Great Western Cereal Co., Chicago, Ill.	Wilkes-Barre, John Ahlbrandt.	1177	10.56	16.76	15.00
4475	Daisy Dairy Feed, The Great Western Cereal Co., Chicago, Ill.	Myerstown, E. L. Bleistein,	775	9.02	16.67	15.00
3763	Daisy Dairy Feed, The Great Western Cereal Co., Chicago, Ill.	Montrose, Brown & Fassett.	63	11.33	16.68	15.00
3789	Daisy Dairy Feed, The Great Western Cereal Co., Chicago, Ill.	Lanesboro, Buckley Bros.,	89	9.66	16.11	15.00
5068	Daisy Dairy Feed, The Great Western Cereal Co., Chicago, Ill.	Erie, W. J. Carroll,	1368	8.91	14.51	15.00
3897	Daisy Dairy Feed, The Great Western Cereal Co., Chicago, Ill.	Emporium, Emporium Milling Co.	197	8.39	15.21	15.00
4033	Daisy Dairy Feed, The Great Western Cereal Co., Chicago, Ill.	Monongahela, D. E. Gamble.	333	9.22	16.36	15.00
4238	Daisy Dairy Feed, The Great Western Cereal Co., Chicago, Ill.	Coatesville, J. T. Gay & Son.	538	9.14	16.28	15.00
4226	Daisy Dairy Feed, The Great Western Cereal Co., Chicago, Ill.	Hanover, Hanover Feed & Coal Co.	526	9.10	15.08	15.00
4414	Daisy Dairy Feed, The Great Western Cereal Co., Chicago, Ill.	Mt. Holly Springs. Percy Harman.	714	9.46	17.25	15.00

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
4.65	3.50	6.27	9.00	$1 65	Corn, hominy feed, oats, oat middlings, oat hulls and oat shorts. Maximum salt ¾ of 1 per cent.	As certified, ...	4705
4.78	--------	7.80	--------	29 36			
3.31	3.00	12.17	12.00	29 00	------------------------------	Corn, oats, cottonseed meal, oat middlings, oat hulls, alfalfa, molasses and salt.	4877
3.30	3.00	13.41	12.00	27 00	Oats, cottonseed meal, alfalfa meal, oat middlings, grain screenings, and N. O. molasses. Maximum salt, three-fourths of one per cent.	Oats, cottonseed meal, alfalfa meal, oat middlings, oat hulls, grain screenings, molasses and salt.	4475
4.22	3.00	12.18	11.00	1 45	Oats, cottonseed meal, alfalfa meal, oat middlings, grain screenings, and N. O. molasses. Maximum salt, three-fourths of one per cent.	Oats, cottonseed meal, alfalfa meal, oat middlings, oat hulls, grain screenings, molasses and salt.	3763
4.28	3.00	12.54	11.00	27 00	Oats, cottonseed meal, alfalfa meal, oat middlings, grain screenings, and N. O. molasses. Maximum salt, three-fourths of one per cent.	Oats, cottonseed meal, alfalfa meal, oat middlings, oat hulls, grain screenings, molasses and salt.	3789
3.17	3.00	13.66	11.00	25 00	Oats, cottonseed meal, alfalfa meal, oat middlings, grain screenings, and N. O. molasses. Maximum salt, three-fourths of one per cent.	Oats, cottonseed meal, alfalfa meal, corn, oat middlings, oat hulls, grain screenings, N. O. molasses and salt.	5068
4.01	3.00	13.07	12.00	30 00	Oats, cottonseed meal, alfalfa meal, oat middlings, grain screenings, and N. O. molasses. Maximum salt, three-fourths of one per cent.	Oats, cottonseed meal, alfalfa meal, oat middlings, oat hulls, grain screenings, N. O. molasses and salt.	3897
3.59	3.00	13.62	12.00	28 00	Oats, cottonseed meal, alfalfa meal, oat middlings, grain screenings, and N. O. molasses. Maximum salt, three-fourths of one per cent.	Oats, cottonseed meal, alfalfa meal, oat middlings, oat hulls, grain screenings, N. O. molasses and salt.	4033
4.14	3.00	11.67	12.00	1 45	Oats, cottonseed meal, alfalfa meal, oat middlings, oat shorts, oat hulls and N. O. molasses. Maximum salt, three-fourths of one per cent.	Oats, cottonseed meal, alfalfa meal, oat middlings, oat shorts, oat hulls, corn, N. O. molasses and salt.	4238
3.36	3.00	12.71	11.00	27 00	Corn, oats, oat middlings, alfalfa meal, cottonseed meal, oat hulls, and grain screenings, mixed with N. O. molasses. Maximum salt, three-fourths of one per cent.	As certified, ...	4226
4.10	3.00	12.07	12.00	1 40	Oats, cottonseed meal, alfalfa meal, oat middlings, grain screenings, and N. O. molasses. Maximum salt, three-fourths of one per cent.	Oats, cottonseed meal alfalfa meal, oat middlings, oat hulls, grain screenings, corn, N. O. molasses and salt.	4414

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein Found.	Crude Protein Guaranteed.
				Per ct.	Per ct.	Per ct.
4231	Daisy Dairy Feed, The Great Western Cereal Co., Chicago, Ill.	Hanover, George Hull and Sons.	531	8.48	16.75	15.00
4021	Daisy Dairy Feed, The Great Western Cereal Co., Chicago, Ill.	Uniontown, King Bros.,	321	9.44	17.35	15.00
4039	Daisy Dairy Feed, The Great Western Cereal Co., Chicago, Ill.	Belle Vernon, C. N. Luce,	339	8.19	14.80	15.00
5108	Daisy Dairy Feed, The Great Western Cereal Co., Chicago, Ill.	Chester, T. F. McCall,	1408	8.21	15.84	15.00
4254	Daisy Dairy Feed, The Great Western Cereal Co., Chicago, Ill.	Mortonville, Monhollend & Dale.	554	8.79	15.54	15.00
4984	Daisy Dairy Feed, The Great Western Cereal Co., Chicago, Ill.	Mercer, I. J. Pizor & Son,	1284	9.40	17.34	15.00
3909	Daisy Dairy Feed, The Great Western Cereal Co., Chicago, Ill.	St. Marys, L. Ritter,	209	9.13	16.35	15.00
4375	Daisy Dairy Feed, The Great Western Cereal Co., Chicago, Ill.	Chambersburg, George Walker.	675	9.65	16.86	15.00
4707	Daisy Dairy Feed, The Great Western Cereal Co., Chicago, Ill.	Philipsburg, Wolf's Mill,	1007	9.33	17.32	15.00
		Average,		9.23	16.26	
4876	Sterling Stock Feed, The Great Western Cereal Co., Chicago, Ill.	Wilkes-Barre, John Ahlbrandt.	1176	7.45	9.86	10.00

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
4.12	3.00	14.04	12.00	$27 00	Oats, cottonseed meal, alfalfa meal, oat middlings, grain screenings, and N. O. molasses. Maximum salt, three-fourths of one per cent.	Oats, cottonseed meal, alfalfa meal, oat middlings, oat hulls, grain screenings, corn, N. O. molasses and salt.	4231
3.10	3.00	13.10	12.00	1 50	Oats, cottonseed meal, alfalfa meal, oat middlings, grain screenings, and N. O. molasses. Maximum salt, three-fourths of one per cent.	Oats, cottonseed meal, alfalfa meal, oat middlings, oat hulls, grain screenings, N. O. molasses and salt.	4021
3.34	3.00	13.49	12.00	26 70	Oats, cottonseed meal, alfalfa meal, oat middlings, grain screenings, and N. O. molasses. Maximum salt, three-fourths of one per cent.	Oats, cottonseed meal, alfalfa meal, oat middlings, oat hulls, grain screenings, N. O. molasses and salt.	4039
3.67	3.00	15.35	12.00	1 50	Oats, cottonseed meal, alfalfa meal, oat middlings, mixed broken grain from barley, oats, rye, etc., with N. O. molasses Maximum salt, three-fourths of one per cent.	Oats, cottonseed meal, alfalfa meal, oat middlings, oat hulls, corn, barley, oats, rye, N. O. molasses and salt.	5108
4.01	3 00	15.00	12.00	27 00	Oats, cottonseed meal, alfalfa meal, oat middlings, grain screenings, and N. O. molasses. Maximum salt, three-fourths of one per cent.	Oats, cottonseed meal, alfalfa meal, oat middlings, oat hulls, grain screenings, N. O. molasses and salt.	4254
3.12	3.00	13.15	12.00	26 00	Oats, cottonseed meal, alfalfa meal, oat middlings, mixed broken grains from barley, oats, rye, etc., with N. O. molasses. Maximum salt, three-fourths of one per cent.	Oats, cottonseed meal, alfalfa meal, oat middlings, oat hulls, barley, oats, rye, N. O. molasses and salt.	4984
4.39	3.00	13.08	12.00	28 00	Oats, cottonseed meal, alfalfa meal, oat middlings, grain screenings, and N. O. molasses. Maximum salt, three-fourths of one per cent.	Oats, cottonseed meal, alfalfa meal, oat middlings, oat hulls, grain screenings, N. O. molasses and salt.	3909
3.43	3.00	12.19	11.00	1 35	....	Oats, cottonseed meal, oat middlings, oat hulls, alfalfa meal, corn, molasses and salt.	4375
3.18	3.00	10.02	12.00	1 50	Oats, cottonseed meal, alfalfa meal, oat middlings, grain screenings, and N. O. molasses. Maximum salt, three-fourths of one per cent.	Oats, cottonseed meal, alfalfa meal, oat middlings, oat hulls, grain screenings, N. O. molasses and salt.	4707
3.68	....	12.97	....	27 93			
5.00	4.00	10.09	9.00	30 00	Corn, oats, barley, cottonseed meal, red dog flour, oat shorts and oat hulls. Maximum salt, three-fourths of one per cent.	As certified, ...	4876

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
4579	Sterling Stock Feed, The Great Western Cereal Co., Chicago, Ill.	Mapleton Depot, H. O. Andrews.	879	9.04	9.81	10.00
4473	Sterling Stock Feed, The Great Western Cereal Co., Chicago, Ill.	Myerstown, E. L. Bleistein,	773	8.93	10.06	10.00
4455	Sterling Stock Feed, The Great Western Cereal Co., Chicago, Ill.	Lebanon, City Flouring Mills.	755	9.20	11.38	10.00
4594	Sterling Stock Feed, The Great Western Cereal Co., Chicago, Ill.	Bedford, N. M. Diehl, -----	894	7.97	10.63	10.00
4038	Sterling Stock Feed, The Great Western Cereal Co., Chicago, Ill.	Monongahela, D. E. Gamble.	338	7.11	10.69	10.00
4233	Sterling Stock Feed, The Great Western Cereal Co., Chicago, Ill.	Hanover, George Hull and Sons.	533	11.16	10.63	10.00
4067	Sterling Stock Feed, The Great Western Cereal Co., Chicago, Ill.	Leechburg, Leechburg Flouring Mill.	367	9.41	11.06	10.00
4086	Sterling Stock Feed, The Great Western Cereal Co., Chicago, Ill.	Ford City, A. M. Mateer,	386	9.42	10.69	10.00
4431	Sterling Stock Feed, The Great Western Cereal Co., Chicago, Ill.	Harrisburg, Mock & Hartman.	731	7.90	10.81	10.00
4364	Sterling Stock Feed, The Great Western Cereal Co., Chicago, Ill.	Waynesboro, J. M. Newcomer & Co.	664	8.58	10.13	10.00
5133	Sterling Stock Feed, The Great Western Cereal Co., Chicago, Ill.	Rockwood, Rockwood Milling Co.	1433	7.87	9.00	10.00

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
4.73	4.00	9.35	9.00	$1 50	Corn, oats, barley, cottonseed meal, red dog flour, oat shorts and oat hulls. Maximum salt, three-fourths of one per cent.	As certified, ...	4579
5.10	4.00	9.90	9.00	29 00	Corn, oats, barley, cottonseed meal, red dog flour, oat shorts and oat hulls. Maximum salt, three-fourths of one per cent.	As certified, ...	4473
6.73	4.00	9.37	9.00	29 00	Corn, oats, barley, cottonseed meal, red dog flour, oat shorts and oat hulls. Maximum salt, three-fourths of one per cent.	As certified, ...	4455
3.60	4.00	9.33	9.00	1 40	Corn, oats, barley, cottonseed meal, red dog flour, oat shorts and oat hulls. Maximum salt, three-fourths of one per cent.	As certified, ...	4504
5.35	4.00	10.94	9.00	30.00	Corn, oats, barley, cottonseed meal, red dog flour, oat shorts and oat hulls. Maximum salt, three-fourths of one per cent.	As certified, ...	4068
4.07	4.00	6.60	9.00	31 00	Corn, oats, barley, cottonseed meal, red dog flour, oat shorts and oat hulls. Maximum salt, three-fourths of one per cent.	As certified, ...	4233
4.00	4.00	6.98	9.00	30 00	Corn, oats, barley, cottonseed meal, red dog flour, oat shorts and oat hulls. Maximum salt, three-fourths of one per cent.	As certified, ...	4067
3.88	4.00	6.02	9.00	30 00	Corn, oats, barley, cottonseed meal, red dog flour, oat shorts and oat hulls. Maximum salt, three-fourths of one per cent.	As certified, ...	4086
6.25	4.00	8.80	9.00	30 00	Corn, oats, barley, cottonseed meal, red dog flour, oat shorts and oat hulls. Maximum salt, three-fourths of one per cent.	As certified, ...	4431
5.63	4.00	9.20	9.00	32 00	Corn, oats, barley, cottonseed meal, red dog flour, oat shorts and oat hulls. Maximum salt, three-fourths of one per cent.	As certified, ...	4364
4.40	4.00	8.87	9.00	1 40	Corn, oats, barley, cottonseed meal, red dog flour, oat shorts and oat hulls. Maximum salt, three-fourths of one per cent.	As certified, ...	5133

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
4495	Sterling Stock Feed, The Great Western Cereal Co., Chicago, Ill.	Reading, Isaiah B. Sibert,	795	7.04	10.81	10.00
4506	Sterling Stock Feed, The Great Western Cereal Co., Chicago, Ill.	Reading, W. T. Snyder,	806	6.92	10.81	10.00
5096	Sterling Stock Feed, The Great Western Cereal Co., Chicago, Ill.	Pottstown, M. B. Tyson & Son.	1896	7.62	10.06	10.00
4373	Sterling Stock Feed, The Great Western Cereal Co., Chicago, Ill.	Chambersburg, George Walker.	673	9.51	10.81	10.00
4708	Sterling Stock Feed, The Great Western Cereal Co., Chicago, Ill.	Philipsburg, Wolf's Mill,	1008	8.90	10.81	10.00
		Average,		8.47	10.47	
4304	H. & S. Alfalfa Feed, Dwight E. Hamlin & Co., Pittsburg, Pa.	Brookville, Kline's Sifter Mills.	604	18.06	12.89	16.00
3984	H. & S. Alfalfa Feed, Dwight E. Hamlin & Co., Pittsburg, Pa.	Irwin, Taylor Kunkle,	284	17.05	9.27	12.00
5194	H. & S. Alfalfa Feed, Dwight E. Hamlin & Co., Pittsburg, Pa.	Braddock, George Moore,	1494	15.18	11.55	12.00
		Average,		16.11	10.41	
4029	Harper's Mixed Alfalfa Stock Feed, James Harper & Sons, Wichita, Kans.	McKeesport, A. Davison,	329	10.46	12.56	12.00
4909	Algrane Milk Feed, The H. O. Co., Buffalo, N. Y.	Hazleton, Geo. W. Engle,	1209	7.80	17.00	14.00
4318	Fine Ground Eclipse Feed, Husted Milling Co., Buffalo, N. Y.	Williamsport, F. W. Dawson & Son.	613	10.02	11.44	9–10
3817	Husted Molasses Feed, Husted Milling Co., Buffalo, N. Y.	Troy, H. M. Spalding & Son.	117	16.24	16.60	18–20
4732	Husted Stock Feed, Husted Milling Co., Buffalo, N. Y.	Du Bois, Timlin & Rishel,	1032	7.94	11.19	8–10

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
5.35	4.00	8.60	9.00	$32 00	Corn, oats, barley, cottonseed meal, red dog flour, oat shorts, oat middlings, and oat hulls. Maximum salt, three-fourths of one per cent.	As certified, ...	4495
5.18	4.00	8.90	9.00	1 65	Corn, oats, barley, cottonseed meal, red dog flour, oat shorts and oat hulls. Maximum salt, three-fourths of one per cent.	As certified, ...	4506
5.05	4.00	9.22	9.00	1 50	Corn, oats, barley, cottonseed meal, red dog flour, oat shorts, oat middlings and oat hulls. Maximum salt, three-fourths of one per cent.	As certified, ...	5096
3.70	4.00	7.47	9.00	1 50	Corn, oats, barley, cottonseed meal, red dog flour, oat shorts and oat hulls. Maximum salt, three-fourths of one per cent.	As certified, ...	4373
6.30	4.00	7.67	9.00	1 75	Corn, oats, barley, cottonseed meal, red dog flour, oat shorts and oat hulls. Maximum salt, three-fourths of one per cent.	As certified, ...	4708
4.96	....	8.78	....	30 41			
4.50	2.00	13.19	16.00	36 00	Alfalfa, molasses and brewers' grain.	As certified, ...	4304
2.92	6.00	8.41	10.00	1 65	Alfalfa, corn, brewers' grain and molasses.	As certified, ...	3984
3.56	6.00	8.38	10.00	2 00	Alfalfa, corn, brewers' grain and molasses.	As certified, ...	5194
3.24	....	8.40	....	36 50			
3.60	3.50	9.32	8–12	1 75	Alfalfa meal, corn chop, bran and linseed oil meal.	As certified, ...	4029
3.75	4.00	11.68	9.00	1 50	Oat hulls, wheat middlings, cottonseed meal, oat bran, gluten, corn, oats and salt.	As certified, ...	4909
5.28	4–6	5.42	7–9	1 45	Corn, oats, oat hulls, middlings, and three-fourths of one per cent. salt.	Corn, oats, oat hulls, wheat, barley, middlings and salt.	4318
4.87	4–6	6.26	8–9	1 40	Cottonseed meal, gluten, oat clippings, corn, oil meal, molasses and three-fourths of one per cent. salt.	As certified, ...	3817
6.55	4–6	7.02	7–9	1 45	Corn, oats, oat hulls, hominy, middlings and three-fourths of one per cent. salt.	As certified, ...	4738

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
5158	International Dairy Feed, International Sugar Feed Co., Minneapolis, Minn.	Canonsburg, Canonsburg Milling Co.	1458	10.98	18.98	16.50
4976	International Dairy Feed, International Sugar Feed Co., Minneapolis, Minn.	Harmony, Harmony Cereal Co.	1276	19.53	15.73	16.50
		Average,		15.25	17.36	
5160	International Special Molasses Feed, International Sugar Feed Co., Minneapolis, Minn.	Canonsburg, Canonsburg Milling Co.	1460	9.02	13.49	12.50
4977	International Special Molasses Feed, International Sugar Feed Co., Minneapolis, Minn.	Harmony, Harmony Cereal Co.	1277	13.73	12.52	12.50
		Average,		11.37	13.01	
5066	Badger Dairy Feed, Charles A. Krause Milling Co., Milwaukee, Wis.	Erie, A. P. Allen,	1366	16.36	16.46	16.00
3770	Badger Dairy Feed, Charles A. Krause Milling Co., Milwaukee, Wis.	New Milford, H. B. Carpenter & Co.	70	12.53	15.43	16–18
5097	Badger Dairy Feed, Charles A. Krause Milling Co., Milwaukee, Wis.	Chester, Chester Milling Co.	1397	14.09	16.06	16.00
3868	Badger Dairy Feed, Charles A. Krause Milling Co., Milwaukee, Wis.	Knoxville, Deerfield Milling Co.	168	14.48	12.18	10–12
3869	Badger Dairy Feed, Charles A. Krause Milling Co., Milwaukee, Wis.	Knoxville, Deerfield Milling Co.	169	12.44	16.85	16–18
3838	Badger Dairy Feed, Charles A. Krause Milling Co., Milwaukee, Wis.	Richland, S. S. Detweiler,	138	11.31	16.21	16–18
4970	Badger Dairy Feed, Charles A. Krause Milling Co., Milwaukee, Wis.	New Castle, Fisher and Mengle.	1270	16.79	16.33	10.00

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
4.92	3.50	12.89	12.00	$29 00	Cottonseed meal, molasses, mixed broken grains, including wheat, oats, barley, buckwheat, flax, oat clips and salt.	As certified, ...	5158
4.56	3.50	11.49	12.00	1 40	Cottonseed meal, molasses, cleaned grain screenings, oat clips and salt.	Cottonseed meal, oat clips, grain screenings, including wheat, barley and small amount of weed seeds, and molasses and salt.	4976
4.74	....	12.19	....	28 50			
4.68	3.50	15.40	12.00	27.00	Cottonseed meal, molasses, mixed broken grains, including wheat, oats, barley, buckwheat, flax, oat clips and salt.	As certified, ...	5160
4.34	3.50	10.51	12.00	1 35	Cottonseed meal, molasses, cleaned grain screenings, oat clips and salt.	Cottonseed meal, oat clips, grain screenings, including wheat, barley and small amount of weed seeds, and molasses and salt.	4977
4.51	....	12.95	....	27 00			
1.87	2.00	12.85	15.00	24 00	Cottonseed meal, dried grains, malt sprouts, alfalfa meal, molasses and one-half of one per cent. salt.	Cottonseed meal, distillers' grains, malt sprouts, alfalfa meal, molasses, salt and trace of weed seeds.	5066
4.57	3.50–4.50	11.37	14.00	27 00	Cottonseed meal, distillers' grains, brewers' grains, malt sprouts, corn, oats, barley, low grade wheat, alfalfa meal, molasses and salt.	As certified, ...	3770
1.89	2.00	15.14	15.00	1 40	Cottonseed meal, dried grains, malt sprouts, alfalfa meal, molasses and one-half of one per cent. salt.	As certified, ...	5097
4.98	4–6	12.05	12–14	27 00	Oil meal, brewers' grains, malt sprouts, corn, oats, alfalfa meal and molasses.	As certified, ...	3868
4.98	3.50–4.50	13.20	12.00	26 00	Cottonseed meal, distillers' grains, brewers' grains, malt sprouts, corn, oats, barley, low grade wheat, alfalfa meal, molasses and salt.	Cottonseed meal, brewers' grains, malt sprouts, corn, oats barley, low grade wheat, alfalfa meal molasses and salt.	3869
5.54	3.50–4.50	13.46	14.00	27 00	Cottonseed meal, distillers' grains, brewers' grains, malt sprouts, corn, oats, barley, low grade wheat, alfalfa meal, molasses and salt.	Cottonseed meal, brewers' grains, malt sprouts, corn, oats barley, low grade wheat, molasses and salt.	3838
1.97	2.00	12.77	15.00	1 80	Cottonseed meal, dried grains, malt sprouts, alfalfa meal, molasses and one-half of one per cent. salt.	As certified, ...	4970

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein. Found.	Crude Protein. Guaranteed.
				Per ct.	Per ct.	Per ct.
4821	Badger Dairy Feed, Charles A. Krause Milling Co., Milwaukee, Wis.	Danville, Haney-Frazier Milling Co.	1121	18.30	15.08	16.00
4820	Badger Dairy Feed, Charles A. Krause Milling Co., Milwaukee, Wis.	Danville, Haney-Frazier Milling Co.	1120	13.35	16.55	16-18
4391	Badger Dairy Feed, Charles A. Krause Milling Co., Milwaukee, Wis.	Scotland, M. Ickes, ...	691	13.59	16.92	16.00
4244	Badger Dairy Feed, Charles A. Krause Milling Co., Milwaukee, Wis.	Parkesburg, E. H. Keen & Co.	544	10.82	18.23	16-18
4168	Badger Dairy Feed, Charles A. Krause Milling Co., Milwaukee, Wis.	Elizabethtown, E. H. Lehman.,	468	12.74	15.66	16.00
3711	Badger Dairy Feed, Charles A. Krause Milling Co., Milwaukee, Wis.	Saltsburg, G. W. Martin & Co.	11	11.76	15.14	16-18
4988	Badger Dairy Feed, Charles A. Krause Milling Co., Milwaukee, Wis.	Mercer, Mercer Milling and Lumber Co., Ltd.	1288	12.00	14.84	16-18
3707	Badger Dairy Feed, Charles A. Krause Milling Co., Milwaukee, Wis.	Blairsville, George J. New,	7	13.71	15.84	16-18

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
1.39	2.00	14.12	15.00	$26 00	Cottonseed meal, dried grains, malt sprouts, alfalfa meal, molasses and one-half of one per cent. salt.	As certified, ...	4821
5.24	3.50–4.50	15.03	14.00	26 00	Cottonseed meal, distillers' grains, brewers' grains, malt sprouts, corn, oats, barley, low grade wheat, alfalfa meal, molasses and one-half of one per cent. salt.	Cottonseed meal, distillers' grains, brewers' grains, malt sprouts, corn, oats, barley, low grade wheat, alfalfa meal, molasses, salt and small amount of weed seeds.	4880
5.65	3.50	13.10	14–15	26 00	Cottonseed meal, distillers' grains, brewers' grains, malt sprouts, corn, oats, barley, low grade wheat, alfalfa meal, molasses and one-fourth of one per cent. salt.	Cottonseed meal, distillers' grains, brewers' grains, malt sprouts, corn, oats, barley, low grade wheat, alfalfa meal, molasses, salt and small amount of weed seeds.	4891
6.20	3.50–4.50	12.83	15.00	26 00	Cottonseed meal, distillers' grains, brewers' grains, malt sprouts, corn, oats, barley, low grade wheat, alfalfa meal, molasses and one-half of one per cent. salt.	Cottonseed meal, distillers' grains, brewers' grains, malt sprouts, corn, oats, barley, low grade wheat, alfalfa meal, molasses, salt and small amount of weed seeds.	4244
5.47	3.50	14.78	15.00	26 50	Cottonseed meal, distillers' grains, brewers' grains, malt sprouts, corn, oats, barley, low grade wheat, alfalfa meal, molasses and one-fourth of one per cent. salt.	Cottonseed meal, brewers' grains, malt sprouts, corn oats, barley, low grade wheat, alfalfa meal, molasses, salt and small amount of weed seeds.	4168
4.71	3.5–4.5	12.26	10–12	27 00	Cottonseed meal, distillers' grains, brewers' grains, malt sprouts, corn, oats, barley, low grade wheat, alfalfa meal, molasses and one-fourth of one per cent. salt.	Cottonseed meal distillers' grains, brewers' grains, malt sprouts, corn, oats, barley, low grade wheat, alfalfa meal, molasses. salt and weed seeds.	3711
3.71	3.5–4.5	12.46	14.00	26 00	Cottonseed meal, distillers' grains, brewers' grains, malt sprouts, corn, oats, barley, low grade wheat, alfalfa meal, molasses and one-fourth of one per cent. salt.	As certified, ...	4988
5.21	3.5–4.5	11.56	12.00	26 00	Cottonseed meal, distillers' grains, brewers' grains, malt sprouts, corn, oats, barley, low grade wheat, alfalfa meal, molasses and salt.	Cottonseed meal distillers' grains, brewers' grains, malt sprouts, corn, oats, barley, low grade wheat, alfalfa meal, molasses. salt and small amount of weed seeds.	3707

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
4348	Badger Dairy Feed, Charles A. Krause Milling Co., Milwaukee, Wis.	Renovo, A. P. Pfoutz, ---	648	9.62	16.88	16.00
3852	Badger Dairy Feed, Charles A. Krause Milling Co., Milwaukee, Wis.	Wellsboro, B. Schrader & Son.	152	11.16	18.46	16-18
4370	Badger Dairy Feed, Charles A. Krause Milling Co., Milwaukee, Wis.	Chambersburg, J. H. Smith & Son.	670	11.90	15.98	16-18
4191	Badger Dairy Feed, Charles A. Krause Milling Co., Milwaukee, Wis.	Bird-in-Hand, J. A. Umble & Bro.	491	13.97	16.42	16.00
5083	Badger Dairy Feed, Charles A. Krause Milling Co., Milwaukee, Wis.	Pottstown, S. B. Wagner & Co.	1383	10.14	17.47	16.00
4268	Badger Dairy Feed, Charles A. Krause Milling Co., Milwaukee, Wis.	Kennett Square, W. H. Walker & Co.	568	13.80	15.54	16-18
4339	Badger Dairy Feed, Charles A. Krause Milling Co., Milwaukee, Wis.	Lock Haven, E. E. Wentz,	639	11.28	14.04	16-18
4683	Badger Dairy Feed, Charles A. Krause Milling Co., Milwaukee, Wis.	Martinsburg, John L. Wineland.	983	16.29	12.30	16.00
4847	Badger Dairy Feed, Charles A. Krause Milling Co., Milwaukee, Wis.	Bloomsburg, The White Milling Co.	1147	15.73	17.22	16.00

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
5.80	3.50	13.98	15.00	$1 60	Cottonseed meal, distillers' grains, brewers' grains, malt sprouts, corn, oats, barley, low grade wheat, alfalfa meal, molasses and one-fourth of one per cent. salt.	Cottonseed meal, brewers' grains, malt sprouts, corn, oats, barley, low grade wheat, alfalfa meal, molasses, salt and small amount of weed seeds.	4348
5.41	3.5-4.5	11.89	12.00	27 00	Cottonseed meal, distillers' grains, brewers' grains, malt sprouts, corn, oats, barley, low grade wheat, alfalfa meal, molasses and salt.	Cottonseed meal, brewers' grains, malt sprouts, corn, oats, barley, low grade wheat, alfalfa meal, molasses and salt.	3862
6.25	3.5-4.5	13.08	14.00	26 00	Cottonseed meal, distillers' grains, brewers' grains, malt sprouts, corn, oats, barley, low grade wheat, alfalfa meal, molasses and one-fourth of one per cent. salt.	Cottonseed meal, distillers' grains, brewers' grains, malt sprouts, corn, oats, barley, low grade wheat, alfalfa meal, molasses, salt and small amount of flaxseed and weed seeds.	4370
3.00	3.00	15.89	20.00	26 00	Cottonseed meal, malt sprouts, brewer's grains, alfalfa meal and molasses.	As certified, ...	4191
3.82	3.50	12.90	15.00	27 00	Cottonseed meal, distillers' grains, brewers' grains, malt sprouts, corn, oats, barley, low grade wheat, alfalfa meal, molasses and one-fourth of one per cent. salt.	As certified, ...	5083
5.57	3.5-4.5	13.28	15.00	26 00	Cottonseed meal, distillers' grains, brewers' grains, malt sprouts, corn, oats, barley, low grade wheat, alfalfa meal, molasses and one-fourth of one per cent. salt.	Cottonseed meal, distillers' grains, brewers' grains, malt sprouts, corn, oats, barley, low grade wheat, alfalfa meal, molasses, salt and small amount of flaxseed and weed seeds.	4268
5.97	3.5-4.5	15.61	12.00	27 00	Cottonseed meal, distillers' grains, brewers' grains, malt sprouts, corn, oats, barley, low grade wheat, alfalfa meal, molasses and one-fourth of one per cent. salt.	As certified, ...	4339
2.80	3.00	15.57	20.00	26 50	Cottonseed meal, malt sprouts, brewer's grains, alfalfa meal and molasses.	As certified, ...	4683
1.64	2.00	12.49	15.00	28 00	Cottonseed meal, dried grains, malt sprouts, alfalfa meal, molasses and one-half of one per cent. salt.	As certified, ...	4847

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
4357	Badger Dairy Feed, Charles A. Krause Milling Co., Milwaukee, Wis.	Gettysburg, C. M. Wolf, Jr.	657	11.49	16.51	16.00
4470	Badger Dairy Feed, Charles A. Krause Milling Co., Milwaukee, Wis.	Myerstown, S. T. Yost,	770	10.59	17.44	16.00
		Average,		13.08	16.00	
4347	Badger Ever Green Feed, Chas. A. Krause Milling Co., Milwaukee, Wis.	Renovo, A. P. Pfoutz,	647	12.17	11.97	10.00
4371	Badger Ever Green Feed, Chas. A. Krause Milling Co., Milwaukee, Wis.	Chambersburg, J. H. Smith & Son.	671	17.92	12.35	10.00
		Average,		15.04	12.16	
3708	Badger Stock Feed, Chas. A. Krause Milling Co., Milwaukee, Wis.	Blairsville, George J. New,	8	12.27	13.03	10-12
4680	Nature's Stock Feed, Chas. A. Krause Milling Co., Milwaukee, Wis.	Martinsburg, John L. Wineland.	980	15.45	10.20	10.00
3808	Best Mixed Feed for Cows, C. P. Matthews & Sons, Inc., Scranton, Pa.	Towanda, C. P. Matthews & Sons, Inc.	108	10.85	19.25	15.00
4875	Best Mixed Feed for Cows, C. P. Matthews & Sons, Inc., Scranton, Pa.	Wilkes-Barre, C. P. Matthews & Sons, Inc.	1175	8.43	21.38	15.00
4934	Best Mixed Feed for Cows, C. P. Matthews & Sons, Inc., Scranton, Pa.	Scranton, C. P. Matthews & Sons, Inc.	1234	9.81	19.63	15.00
		Average,		9.69	20.09	
4919	Mihimico Stock Feed, Miner-Hillard Milling Co., Wilkes-Barre, Pa.	Scranton, Miner-Hillard Milling Co.	1219	9.00	11.88	11-15
4883	Mihimico Stock Feed, Miner-Hillard Milling Co., Wilkes-Barre, Pa.	Wilkes-Barre, Miner-Hillard Milling Co.	1183	9.13	11.50	11-15
		Average,		9.06	11.69	
5113	Sugarota Dairy Feed, North West Mills Co., Winona, Minn.	Doylestown, H. S. Beidler,	1413	11.01	17.97	16-18

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
5.51	3.50	14.18	15.00	$1 25	Cottonseed meal, distillers' grains, brewers' grains, malt sprouts, corn, oats, barley, low grade wheat, alfalfa meal, molasses and one-fourth of one per cent. salt.	Cottonseed meal, brewers' grains, malt sprouts, corn, oats, barley, low grade wheat, alfalfa meal, molasses, salt and small amount of weed seeds.	4357
6.47	3.50	13.77	15.00	1 30	Cottonseed meal, distillers' grains, brewers' grains, malt sprouts, corn, oats, barley, low grade wheat, alfalfa meal, molasses and one-fourth of one per cent. salt.	Cottonseed meal, brewers' grains, malt sprouts, corn, oats, barley, low grade wheat, alfalfa meal, molasses, salt and small amount of weed seeds.	4470
4.43	....	13.44	....	26 58			
1.59	1.00	16.09	30.00	1 60	Alfalfa and syrup, ...	As certified, ...	4347
1.05	1.00	16.31	30.00	30 00	Alfalfa and syrup, ...	As certified, ...	4371
1.32	....	15.70	....	31 00			
4.10	4-6	11.82	12-14	1 80	Oil meal, brewers' grains, malt sprouts, corn, oats, alfalfa meal and molasses.	As certified, ...	3708
1.99	2.50	10.52	20.00	29 00	Corn, oats, brown alfalfa and molasses.	As certified, ...	4680
3.74	5.00	5.62	8.00	1 55	Middlings, corn meal, linseed meal and gluten.	As certified, ...	3808
4.60	5.00	6.92	4.00	1 60	Middlings, corn meal, linseed meal and gluten.	As certified, ...	4875
4.50	5.00	6.62	8.00	1 50	Middlings, corn meal, linseed meal and gluten.	As certified, ...	4934
4.28	....	6.38	....	31 00			
6.00	5-7	8.67	8-10	1 65	Alfalfa, hominy feed, middlings, corn, oats, oil meal and salt.	As certified, ...	4919
6.20	5-7	7.50	8-10	1 65	Alfalfa, hominy feed, middlings, corn, oats, oil meal and salt.	As certified, ...	4883
6.10	....	8.08	....	33 00			
5.44	3-5	11.41	9.00	27 00	Cottonseed meal, flax bran, linseed meal, malt sprouts, mill feeds, molasses and salt.	Cottonseed meal, flax plant refuse and shives, linseed meal, malt sprouts, corn oats, wheat, barley, molasses, salt and small amount of weed seeds.	5113

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
3756	Sugarota Dairy Feed, North West Mills Co., Winona, Minn.	Johnstown, McDermott & Co.	56	11.89	16.07	16-18
4461	Sugarota Dairy Feed, North West Mills Co., Winona, Minn.	Lebanon, A. M. Weltmer's Sons.	761	11.00	16.62	16-18
		Average,	....	11.30	17.09	....
4057	Otto Weiss Alfalfa Dairy Food, Otto Weiss Alfalfa Stock Food Co., Wichita, Kansas.	Pittsburg, The I. W. Scott Co.	357	8.33	14.25	14.00
4052	Otto Weiss Alfalfa Hog Food, Otto Weiss Alfalfa Stock Food Co., Wichita, Kansas.	Pittsburg, The I. W. Scott Co.	352	7.38	21.38	17.96
3969	Otto Weiss Alfalfa Oats Food, The Otto Weiss Alfalfa Stock Food Co., Wichita, Kansas.	Greensburg, Harry Orr & Co.	269	9.24	12.50	12.00
5175	Otto Weiss Alfalfa Stock Food, The Otto Weiss Alfalfa Stock Food Co., Wichita, Kansas.	Carnegie, C. A. Foster,	1475	10.23	13.50	11.00
4090	Otto Weiss Alfalfa Stock Food, The Otto Weiss Alfalfa Stock Food Co., Wichita, Kansas.	New Kensington, J. A. Hawk.	390	10.09	12.50	11.00
4001	Otto Weiss Alfalfa Stock Food, The Otto Weiss Alfalfa Stock Food Co., Wichita, Kansas.	Mt. Pleasant, F. E. Painter.	301	10.06	11.88	12.00
		Average,	....	12.66	12.63	....
3855	P. & S. Feed, Phelps & Sibley Co., Cuba, N. Y.	Westfield, H. Z. Pride & Son.	155	10.61	7.88	8.50
5123	Pioneer Stock Feed, The Pioneer Cereal Co., Akron, Ohio.	Somerset, John G. Emert,	1423	8.18	10.31	10.00
4087	Pollocks C. O. & B. Feed, L. Pollock, Kittanning, Pa.	Manorville, Gruskin Bros.,	387	8.79	10.69	10.00
5126	C. O. & B. Feed, The Quaker Oats Co., Chicago, Ill.	Somerset, H. C. Beerit's Sons.	1426	7.76	10.81	10.00
4078	C. O. & B. Feed, The Quaker Oats Co., Chicago, Ill.	Kittanning, William Gates Est.	378	8.35	10.88	10.00

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
6.28	3-5	11.23	9.00	$1 50	Cottonseed meal, flax bran, linseed meal, malt sprouts, mill feeds, molasses and salt.	Cottonseed meal, flax plant refuse and shives, linseed meal, malt sprouts, corn, oats, wheat, barley, molasses, salt and small amount of weed seeds.	3856
6.89	3-5	9.95	9.00	26 00	Cottonseed meal, flax bran, linseed meal, malt sprouts, mill feeds, molasses and salt.	Cottonseed meal, flax plant refuse and shives, linseed meal, malt sprouts, corn, oats, wheat, barley, molasses, salt and large amount of weed seeds.	4461
6.20	....	10.86	....	27 67			
4.20	3.00	14.10	14.00	32 00	Alfalfa, corn chop, linseed oil meal, and three-fourths of one per cent. salt.	As certified, ...	4057
5.35	4.26	10.43	....	35 00	Alfalfa, shorts, oil meal, meat meal, charcoal and salt.	As certified, ...	4052
4.18	3.50	10.89	10-15	34 00	Alfalfa, oats, corn chop, bran, linseed oil meal, and three-fourth of one per cent. salt.	As certified, ...	3969
3.85	3.50	9.21	14.00	31 00	Alfalfa, corn chop, bran, shorts, linseed oil meal, and three-fourths of one per cent. salt.	As certified, ...	5175
3.90	3.50	11.38	14.00	1 75	Alfalfa, corn chop, bran, shorts, linseed oil meal, and three-fourths of one per cent. salt.	As certified, ...	4090
3.20	3.50	7.42	8-15	1 80	Alfalfa, corn chop, bran, shorts, linseed oil meal, and three-fourths of one per cent. salt.	As certified, ...	4001
3.65	....	9.33	....	34 00			
3.60	3.00	5.98	5.00	30 00	Pure corn meal and oat hulls.	As certified, ...	3855
5.35	3.50	6.67	3.50	30 00	Shelled corn, barley, oat shorts and oat middlings.	Shelled corn, barley, oat shorts, oat middlings and small amount of oat hulls.	5123
4.95	4.00	10.87	9.00	1 50	Corn, barley, wheat flour, oat shorts, oat middlings, oat hulls and cottonseed meal.	As certified, ...	4087
5.10	3.25	10.06	9.00	1 50	Corn, oat meal, mill by-product (oat shorts, oat hulls, oat middlings), wheat flour, barley, 50 lbs. cottonseed meal per ton and one-half of one per cent. salt.	As certified, ...	5126
4.65	3.25	10.57	9.00	29 00	Corn, oat middlings, oat hulls, wheat flour, barley, 50 lbs. cottonseed meal per ton, and one-half of one per cent. salt.	As certified, ...	4078

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
4280	C. O. & B. Feed, The Quaker Oats Co., Chicago, Ill.	Mifflin, Manbeck & Nelson,	589	8.78	11.06	10.00
5021	C. O. & B. Feed, The Quaker Oats Co., Chicago, Ill.	Oil City, The Magee Feed Co.	1321	7.69	16.88	10.00
4401	C. O. & B. Feed, The Quaker Oats Co., Chicago, Ill.	Newville, S. E. Shenk,	701	8.91	10.81	10.00
4014	C. O. & B. Feed, The Quaker Oats Co., Chicago, Ill.	Uniontown, W. S. Smith,	314	7.66	10.88	10.00
		Average,	....	8.19	11.89	....
4256	Quaker Dairy Molasses Feed, The Quaker Oats Co., Chicago, Ill.	West Chester, I. H. Bailey,	556	6.12	19.90	16.00
5127	Quaker Dairy Molasses Feed, The Quaker Oats Co., Chicago, Ill.	Somerset, H. C. Beerits' Sons.	1427	9.07	14.04	16.00
4008	Quaker Dairy Molasses Feed, The Quaker Oats Co., Chicago, Ill.	Mt. Pleasant, J. H. Brown & Son.	308	7.78	12.69	16.00
4590	Quaker Dairy Molasses Feed, The Quaker Oats Co., Chicago, Ill.	Bedford, Davidson Bros.,	890	8.57	16.25	16.00
3981	Quaker Dairy Molasses Feed, The Quaker Oats Co., Chicago, Ill.	Greensburg, W. N. Davis,	281	9.56	15.45	16.00

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
4.68	3.25	10.15	9.00	$30 00	Corn, oat meal, mill by-product (oat shorts, oat hulls and oat middlings), wheat flour, barley, 50 lbs. cottonseed meal per ton and one-half of one per cent. salt.	As certified, ...	4289
4.38	3.25	10.36	9.00	1 40	Corn, oat meal, mill by-product (oat shorts, oat hulls and oat middlings), wheat flour, barley, 50 lbs. cottonseed meal per ton and one-half of one per cent. salt.	As certified, ...	5021
4.10	3.25	9.10	9.00	30 00	Corn, oat middlings, oat hulls, wheat flour, barley, 50 lbs. cottonseed meal, and one-half of one per cent. salt.	As certified, ...	4401
4.20	4.00	11.24	9.00	1 65	Corn, oat middlings, oat hulls, wheat flour, barley, cottonseed meal, and one-half of one per cent. salt.	As certified, ...	4014
4.52	....	10.24	....	30 00			
4.94	3.50	12.83	9.00	28 00	Cottonseed meal, grain screenings, flax pods and stalks, oat meal, mill by-product (oat hulls, oat middlings, and oat shorts), corn and molasses.	As certified: trace of salt present.	4256
4.79	3.50	13.04	9.00	1 40	Cottonseed meal, grain screenings, flax pods and stalks, oat meal, mill by-product (oat hulls, oat middlings, and oat shorts), corn and molasses.	As certified, ...	5127
6.53	3.50	12.65	9.00	1 40	Cottonseed meal, grain screenings, flax pods and stalks, oat meal, mill by-product (oat hulls, oat middlings, and oat shorts), corn and molasses.	Cottonseed meal, grain screenings, flax pods and stalks, oat hulls, oat middlings, oat shorts, corn, molasses, and trace of salt and weed seeds.	4008
3.59	3.50	12.02	9.00	28 00	Cottonseed meal, grain screenings, flax pods and stalks, oat meal, mill by-product (oat hulls, oat middlings, and oat shorts), corn and molasses.	As certified, ...	4500
5.28	3.50	13.55	9.00	1 35	Cottonseed meal, wheat bran, wheat middlings, oat middlings, oat hulls, flax bran, yellow corn and molasses.	Cottonseed meal, wheat bran, wheat middlings, oat middlings, oat hul's, flax plant refuse and shives, corn, molasses and trace of salt.	3961

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein. Found.	Crude Protein. Guaranteed.
				Per ct.	Per ct.	Per ct.
5169	Quaker Dairy Molasses Feed, The Quaker Oats Co., Chicago, Ill.	Canonsburg, Dunlap Bros.,	1469	7.71	13.94	16.00
4576	Quaker Dairy Molasses Feed, The Quaker Oats Co., Chicago, Ill.	Mapleton, I. W. Fleck,....	876	9.90	15.30	16.00
4612	Quaker Dairy Molasses Feed, The Quaker Oats Co., Chicago, Ill.	Altoona, J. B. Forsht,....	912	8.56	14.69	16.00
4320	Quaker Dairy Molasses Feed, The Quaker Oats Co., Chicago, Ill.	Williamsport, Gohl & King,	620	9.20	17.12	16.00
4032	Quaker Dairy Molasses Feed, The Quaker Oats Co., Chicago, Ill.	Monongahela, James B. Hayward & Son.	332	9.54	16.74	16.00
4972	Quaker Dairy Molasses Feed, The Quaker Oats Co., Chicago, Ill.	Newcastle, F. W. Hutchinson & Son.	1272	10.68	16.15	16.00
3992	Quaker Dairy Molasses Feed, The Quaker Oats Co., Chicago, Ill.	Jeannette, Keystone Supply Co.	292	8.79	15.03	16.00
4022	Quaker Dairy Molasses Feed, The Quaker Oats Co., Chicago, Ill.	Uniontown, King Bros.,...	322	8.28	17.12	16.00
5200	Quaker Dairy Molasses Feed, The Quaker Oats Co., Chicago, Ill.	Braddock, C. B. Marriott & Sons.	1500	5.90	13.94	16.00

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct. 3.70	Per ct. 3.50	Per ct. 14.46	Per ct. 9.00	$26 00	Cottonseed meal, grain screenings, flax pods and stalks, oatmeal, mill by-product (oat hulls, oat middlings and oat shorts), corn and molasses.	As certified, ...	5169
3.95	3.50	12.89	9.00	1.65	Cottonseed meal, grain screenings, flax pods and stalks, oatmeal, mill by-product (oat hulls, oat middlings and oat shorts) corn and molasses.	As certified, ...	4570
5.27	3.50	13.00	9.00	28 00	Cottonseed meal, grain screenings, flax pods and stalks, oatmeal, mill by-products (oat hulls, oat middlings and oat shorts), corn and molasses.	As certified, ...	4612
4.00	3.50	12.37	9.00	1 50	Cottonseed meal, wheat bran, wheat middlings, oat middlings, oat hulls, flax bran, yellow corn and molasses.	Cottonseed meal, wheat bran, wheat middlings, oat middlings, oat hulls, flax plant refuse and shives, corn, molasses and trace of salt.	4320
4.37	3.50	13.70	9.00	1 30	Cottonseed meal, grain screenings, flax pods and stalks, oatmeal, mill by-products, (oat hulls, oat middlings and oat shorts), corn and molasses.	As certified; trace of salt present.	4032
4.52	3.50	11.96	9.00	1 50	Cottonseed meal, wheat bran, wheat middlings, oat middlings, oat hulls, flax bran, yellow corn and molasses.	Cottonseed meal, wheat bran, wheat middlings, oat middlings, oat hulls, flax plant refuse and shives, corn and molasses.	4972
4.73	3.50	13.19	9.00	30 00	Cottonseed meal, wheat bran, wheat middlings, oat middlings, oat hulls, flax bran, yellow corn and molasses.	Cottonseed meal, wheat bran, wheat middlings, oat middlings, oat hulls, flax plant refuse and shives, corn and molasses, and trace of salt.	3992
4.15	3.50	12.74	9.00	1 50	Cottonseed meal, wheat bran, wheat middlings, oat middlings,oat hulls, flax bran, yellow corn and molasses.	Cottonseed meal, wheat bran, wheat middlings, oat middlings, oat hulls, flax plant refuse and shives, corn, molasses and trace of salt.	4022
4.37	3.50	13.17	9.00	1 60	Cottonseed meal, grain screenings, flax pods and stalks, oatmeal, mill by-products (oat hulls, oat middlings and oat shorts), corn and molasses.	As certified, ...	5300

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
5142	Quaker Dairy Molasses Feed, The Quaker Oats Co., Chicago, Ill.	Washington, G. W. McBrier.	1442	8.79	16.19	16.00
4043	Quaker Dairy Molasses Feed, The Quaker Oats Co., Chicago, Ill.	Charleroi, R. C. Mountser,	343	9.90	17.01	16.00
4434	Quaker Dairy Molasses Feed, The Quaker Oats Co., Chicago, Ill.	Harrisburg, I. L. Nailor, --	734	8.91	15.62	16.00
3961	Quaker Dairy Molasses Feed, The Quaker Oats Co., Chicago, Ill.	Derry, J. O. Nicely, -------	261	9.47	15.01	16.00
4061	Quaker Dairy Molasses Feed, The Quaker Oats Co., Chicago, Ill.	Apollo, L. Todd Owens,--	361	8.21	15.52	16.00
4064	Quaker Dairy Molasses Feed, The Quaker Oats Co., Chicago, Ill.	Vandergrift, T. J. Rowley,	364	9.19	15.48	16.00
5139	Quaker Dairy Molasses Feed, The Quaker Oats Co., Chicago, Ill.	Washington, C. B. Ruch,-	1439	7.17	14.63	16.00
4998	Quaker Dairy Molasses Feed, The Quaker Oats Co., Chicago, Ill.	Sharon, Sharon Milling Co.	1298	7.71	13.43	16.00
3838	Quaker Dairy Molasses Feed, The Quaker Oats Co., Chicago, Ill.	Quakertown, T. & J. Strawn.	138	7.83	16.28	16.00

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
4.76	3.50	12.18	9.00	$25 00	Cottonseed meal, grain screenings, flax pods and stalks, oatmeal, mill by-product (oat shorts, oat hulls and oat middlings), corn and molasses.	As certified, ...	5142
5.21	3.50	12.07	9.00	26 00	Cottonseed meal, wheat bran, wheat middlings, oat middlings, oat hulls, flax bran, yellow corn and molasses.	Cottonseed meal, wheat bran, wheat middlings, oat middlings, oat hulls, flax plant refuse and shives, corn, molasses and trace of salt.	4043
4.97	3.50	12.32	9.00	1 30	Cottonseed meal, grain screenings, flax pods and stalks, oatmeal mill by-products (oat hulls, oat middlings and oat shorts), corn and molasses.	As certified, ...	4434
4.79	3.50	13.41	9.00	1 55	Cottonseed meal, wheat bran, wheat middlings, oat middlings, oat hulls, flax bran, yellow corn and molasses.	Cottonseed meal, wheat bran, wheat middlings, oat middlings, oat hulls, flax plant refuse and shives, corn, molasses, and trace of salt.	3961
4.95	3.50	13.18	9.00	1 50	Cottonseed meal, wheat bran, wheat middlings, oat middlings, oat hulls, flax bran, yellow corn and molasses.	Cottonseed meal, wheat bran, wheat middlings, oat middlings, oat hulls, flax plant refuse and shives, corn, molasses, and trace of salt.	4061
5.14	3.50	13.51	9.00	1 40	Cottonseed meal, grain screenings, flax pods and stalks, oatmeal mill by-products (oat hulls, oat middlings and oat shorts), corn and molasses.	Cottonseed meal, grain screenings, flax pods and stalks, oat hulls, oat middlings, oat shorts, corn, molasses, and trace of salt and weed seeds.	4064
4.62	3.50	13.44	9.00	1 45	Cottonseed meal, grain screenings, flax pods and stalks, oatmeal mill by-product (oat hulls, oat middlings and oat shorts), corn and molasses.	As certified, ...	5189
4.46	3.50	12.49	9.00	1 40	Cottonseed meal, grain screenings, flax pods and stalks, oatmeal mill by-product (oat hulls, oat middlings and oat shorts), corn and molasses.	As certified, ...	4998
4.86	3.50	12.99	9.00	1 35	Cottonseed meal, wheat bran, wheat middlings, oat middlings, oat hulls, flax bran, yellow corn and molasses.	Cottonseed meal, wheat bran, wheat middlings, oat middlings, oat hulls, flax plant refuse and shives, corn, molasses, and trace of salt.	3833

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
3758	Quaker Dairy Molasses Feed, The Quaker Oats Co., Chicago, Ill.	Johnstown, A. F. Stutzman.	58	8.62	15.58	16.00
4469	Quaker Dairy Molasses Feed, The Quaker Oats Co., Chicago, Ill.	Myerstown, S. T. Yost, ...	769	7.64	15.81	16.00
		Average,		8.51	15.55	....
4635	Schumacher Stock Feed, The Quaker Oats Co., Chicago, Ill.	Altoona, Altoona Feed and Grain Co.	935	7.98	10.63	10.00
3741	Schumacher Stock Feed, The Quaker Oats Co., Chicago, Ill.	Ebensburg, Barker Bros.,	41	8.56	11.66	10.00
3851	Schumacher Stock Feed, The Quaker Oats Co., Chicago, Ill.	Wellsboro, Max Bernkopf & Bro.	151	8.19	10.63	10.00
4860	Schumacher Stock Feed, The Quaker Oats Co., Chicago, Ill.	Berwick, T. M. Bomboy, ..	11.60	7.76	10.19	10.00
4725	Schumacher Stock Feed, The Quaker Oats Co., Chicago, Ill.	Osceola Mills, Brown, Baird & Reeve.	1085	8.35	11.56	10.00
5069	Schumacher Stock Feed, The Quaker Oats Co., Chicago, Ill.	Titusville, L. S. Clark, ..	1839	7.57	10.50	10.00
4589	Schumacher Stock Feed, The Quaker Oats Co., Chicago, Ill.	Bedford, Davidson Bros., ..	889	9.41	10.25	10.00

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
4.76	3.50	10.39	9.00	$1 50	Cottonseed meal, wheat bran, wheat middlings, oat middlings, oat hulls, flax bran, yellow corn and molasses.	Cottonseed meal, wheat bran, wheat middlings, oat middlings, oat hulls, flax plant refuse and shives, corn, molasses, and trace of salt.	3758
3.74	3.50	11.75	9.00	1 30	Cottonseed meal, grain screenings, flax pods and stalks, oatmeal mill by-product (oat hulls, oat middlings and oat shorts), corn and molasses.	As certified, ...	4469
4.68	....	12.77	....	28 40			
4.68	3.25	9.92	9.00	1 45	Corn, oatmeal mill by-product (oat shorts, oat hulls and oat middlings),wheat flour, barley, 50 lbs. cottonseed meal per ton and one-half of one per cent. salt.	As certified, ...	4635
4.40	4.00	10.85	9.00	32 00	Corn, oat middlings, oat hulls, wheat flour, barley, 50 lbs. cottonseed meal per ton, and one-half of one per cent. salt.	As certified, ...	3741
4.00	4.00	8.79	9.00	1 50	Corn, oat middlings, oat hulls, wheat flour, barley, 50 lbs. cottonseed meal per ton, and one-half of one per cent. salt.	As certified, ...	3851
4.60	3.25	9.98	9.00	1 60	Corn, barley, wheat flour, oat meal mill by-product (oat shorts, oat hulls and oat middlings), 50 lbs. cottonseed meal per ton, and one-half of one per cent. salt.	As certified, ...	4860
4.85	3.25	9.52	9.00	1 80	Corn, oat meal mill by-products (oat shorts, oat hulls and oat middlings), wheat flour, barley. 50 lbs. cottonseed meal per ton and ½ of 1 per cent. salt.	As certified, ...	4725
4.40	3.25	10.72	9.00	1 40	Corn, oat meal mill by-product (oat shorts, oat hulls and oat middlings), wheat flour, barley. 50 lbs. cottonseed meal per ton and ½ of 1 per cent. salt.	As certified, ...	5069
3.98	3.25	9.59	9.00	29 00	Corn, oat meal mill by-product (oat shorts, oat hulls and oat middlings), wheat flour, barley. 50 lbs. cottonseed meal per ton and ½ of 1 per cent. salt.	As certified, ...	4689

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein. Found.	Crude Protein. Guaranteed.
				Per ct.	Per ct.	Per ct.
3944	Schumacher Stock Feed, The Quaker Oats Co., Chicago, Ill.	Warren, T. N. Dunham,	244	9.63	10.81	10.00
4941	Schumacher Stock Feed, The Quaker Oats Co., Chicago, Ill.	Scranton, Geo. H. Easterle,	1241	8.41	10.94	10.00
3729	Schumacher Stock Feed, The Quaker Oats Co., Chicago, Ill.	Patton, F. E. Farabaugh,	29	9.38	10.75	10.00
4577	Schumacher Stock Feed, The Quaker Oats Co., Chicago, Ill.	Mapleton Depot, I. W. Fleck.	877	9.16	11.25	10.00
4083	Schumacher Stock Feed, The Quaker Oats Co., Chicago, Ill.	Kittanning, J. A. Gault & Co.	383	9.19	10.63	10.00
4799	Schumacher Stock Feed, The Quaker Oats Co., Chicago, Ill.	Lewisburg, Gonser & Noll,	1099	8.42	10.75	10.00
4346	Schumacher Stock Feed, The Quaker Oats Co., Chicago, Ill.	Renovo, P. O. Hagan & Son.	646	9.12	11.31	10.00
3761	Schumacher Stock Feed, The Quaker Oats Co., Chicago, Ill.	Montrose, J. C. Harrington.	61	8.84	9.88	10.00
5137	Schumacher Stock Feed, The Quaker Oats Co., Chicago, Ill.	Washington, D. P. Hart,	1437	7.78	10.69	10.00
4992	Schumacher Stock Feed, The Quaker Oats Co., Chicago, Ill.	Greenville, Hecker & Reed,	1292	8.67	10.50	10.00

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
4.38	4.00	10.11	9.00	$29 00	Corn, oat middlings, oat hulls, wheat flour, barley, 50 lbs. cottonseed meal per ton and ½ of 1 per cent. salt.	As certified, ...	3944
4.35	3.25	10.04	9.00	1 50	Corn, barley, wheat flour, oat meal mill by-product (oat shorts, oat hulls and oat middlings), 50 lbs. cottonseed meal per ton and ½ of 1 per cent. salt.	As certified, ...	4941
4.25	4.00	10.34	9.00	31 00	Corn, oat middlings, oat hulls, wheat flour, barley, 50 lbs. cottonseed meal per ton and ½ of 1 per cent. salt.	As certified, ...	3729
4.70	3.25	9.90	9.00	1 65	Corn, oatmeal, mill by-product (oat shorts, oat hulls and oat middlings), wheat flour, barley, 50 lbs. cottonseed meal per ton and ½ of 1 per cent. salt.	As certified, ...	4577
4.96	3.25	10.17	9.00	29 00	Corn, barley, wheat flour, oatmeal mill by-product (oat shorts, oat hulls and oat middlings), 50 lbs. cottonseed meal per ton and ½ of 1 per cent. salt.	As certified, ...	4083
4.13	3.25	9.15	9.00	1 45	Corn, oatmeal mill by-product (oat shorts, oat hulls and oat middlings), wheat flour, barley, 50 lbs. cottonseed meal per ton and ½ of 1 per cent. salt.	As certified, ...	4799
4.45	3.25	9.57	9.00	1 65	Corn, oatmeal mill by-product (oat shorts, oat hulls and oat middings), wheat flour, barley, 50 lbs. cottonseed meal per ton and ½ of 1 per cent. salt.	As certified, ...	4346
3.85	4.00	11.83	9.00	32 00	Corn, oat middlings, oat hulls, wheat flour, barley, 50 lbs. cottonseed meal per ton and ½ of 1 per cent. salt.	As certified, ...	3761
4.85	3.25	10.00	9.00	26 00	Corn, oatmeal mill by-product (oat shorts, oat hulls and oat middlings), wheat flour, barley, 50 lbs. cottonseed meal per ton and ½ of 1 per cent. salt.	As certified, ...	5137
4.88	3.25	9.80	9.00	1 50	Corn, barley, wheat flour, oatmeal mill by-product (oat hulls, oat shorts and oat middlings), 50 lbs. cottonseed meal per ton and ½ of 1 per cent. salt.	As certified, ...	4992

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
4141	Schumacher Stock Feed, The Quaker Oats Co., Chicago, Ill.	Leaman Place, Harry K. Hershey.	441	8.39	10.56	10.00
4275	Schumacher Stock Feed, The Quaker Oats Co., Chicago, Ill.	Lewistown, Heaverly Mfg., Storage and Supply Co.	575	8.35	10.81	10.00
4608	Schumacher Stock Feed, The Quaker Oats Co., Chicago, Ill.	Wilkinsburg, Jordan & Steenson.	908	8.66	10.81	10.00
4896	Schumacher Stock Feed, The Quaker Oats Co., Chicago, Ill.	Wilkes-Barre, Kirkendall Son Co.	1196	8.40	10.25	10.00
3780	Schumacher Stock Feed, The Quaker Oats Co., Chicago, Ill.	Susquehanna, A. L. Langford.	80	7.82	10.06	10.00
4293	Schumacher Stock Feed, The Quaker Oats Co., Chicago, Ill.	Lindsay, Lindsay Milling Co.	593	9.10	11.19	10.00
4179	Schumacher Stock Feed, The Quaker Oats Co., Chicago, Ill.	Elizabethtown, A. W. Martin.	479	8.09	11.56	10.00
5144	Schumacher Stock Feed, The Quaker Oats Co., Chicago, Ill.	Washington, G. W. McBrier.	1444	8.16	11.06	10.00
5191	Schumacher Stock Feed, The Quaker Oats Co., Chicago, Ill.	Braddock, George Moore, -	1491	8.75	10.75	10.00
4485	Schumacher Stock Feed, The Quaker Oats Co., Chicago, Ill.	Harrisburg, I. L. Nailor,--	785	8.45	10.69	10.00

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct. 5.15	Per ct. 3.25	Per ct. 10.85	Per ct. 9.00	$30 00	Corn, oatmeal mill by-product (oat shorts, oat hulls and oat middlings), wheat flour, barley, 50 lbs. cottonseed meal per ton and ½ of 1 per cent. salt.	As certified, ...	4141
4.78	3.25	10.45	9.00	30 00	Corn, barley, wheat flour, oatmeal mill by-product (oat hulls, oat shorts and oat middlings), 50 lbs. cottonseed meal per ton and ½ of 1 per cent. salt.	As certified, ...	4275
4.73	3.25	10.35	10.00	1 55	....	Cottonseed meal, wheat flour, barley, oat middlings, oat hulls and salt.	4608
3.25	3.25	9.82	9.00	1 60	Corn, oatmeal mill by-product (oat shorts, oat hulls and oat middlings), wheat flour, barley, 50 lbs. cottonseed meal per ton and ½ of 1 per cent. salt.	As certified, ...	4896
4.55	3.25	11.69	9.00	33 00	Corn, oat middlings, oat hulls, wheat flour, barley, 50 lbs. cottonseed meal per ton and ½ of 1 per cent. salt.	As certified, ...	3780
4.78	3.25	9.27	9.00	1 55	Corn, barley, wheat flour, oatmeal mill by-product (oat hulls, oat shorts and oat middlings), 50 lbs. cottonseed meal per ton and ½ of 1 per cent. salt.	As certified, ...	4293
5.68	3.25	9.70	9.00	29 00	Corn, barley, wheat flour, oatmeal mill by-product (oat hulls, oat shorts and oat middlings), 50 lbs. cottonseed meal per ton and ½ of 1 per cent. salt.	As certified, ...	4179
4.70	3.25	9.40	9.00	28 00	Corn, oatmeal mill by-product (oat shorts, oat hulls and oat middlings), wheat flour, barley, 50 lbs. cottonseed meal per ton and ½ of 1 per cent. salt.	As certified, ...	5144
4.18	3.25	9.41	9.00	1 60	Corn, oatmeal mill by-product (oat shorts, oat hulls and oat middlings), wheat flour, barley, 50 lbs. cottonseed meal per ton and ½ of 1 per cent. salt.	As certified, ...	5191
4.40	3.25	9.57	9.00	1 50	Corn, oatmeal mill by-product (oat shorts, oat hulls and oat middlings), wheat flour, barley, 50 lbs. cottonseed meal per ton and ½ of 1 per cent. salt.	As certified, ...	4436

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
3727	Schumacher Stock Feed, The Quaker Oats Co., Chicago, Ill.	Indiana, J. L. Orr, ...	27	7.80	11.63	10.00
3970	Schumacher Stock Feed, The Quaker Oats Co., Chicago, Ill.	Greensburg, Harry Orr & Co.	270	8.76	10.56	10.00
4002	Schumacher Stock Feed, The Quaker Oats Co., Chicago, Ill.	Mt. Pleasant, F. E. Painter.	302	9.24	10.38	10.00
3713	Schumacher Stock Feed, The Quaker Oats Co., Chicago, Ill.	Saltsburg, Patterson Milling Co.	18	8.08	10.69	10.00
4128	Schumacher Stock Feed, The Quaker Oats Co., Chicago, Ill.	Lancaster, Fred Pontz, ----	428	8.46	10.94	10.00
4588	Schumacher Stock Feed, The Quaker Oats Co., Chicago, Ill.	Mt. Union, David Rummel,	888	7.53	11.06	10.00
5188	Schumacher Stock Feed, The Quaker Oats Co., Chicago, Ill.	Pitcairn, D. F. Salyards,--	1488	9.04	10.88	10.00
4494	Schumacher Stock Feed, The Quaker Oats Co., Chicago, Ill.	Reading, Isaiah B. Seibert,	794	7.62	11.00	10.00
4967	Schumacher Stock Feed, The Quaker Oats Co., Chicago, Ill.	Butler, B. F. Shannon & Co.	1267	7.70	11.00	10.00
4533	Schumacher Stock Feed, The Quaker Oats Co., Chicago, Ill.	Allentown, Geo. B. Shelly Est.	833	8.81	10.88	10.00
3935	Schumacher Stock Feed, The Quaker Oats Co., Chicago, Ill.	Bradford, Smith Bros., ----	235	9.02	10.44	10.00

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct	Per ct.	Per ct.	Per ct.				
5.00	4.00	11.01	9.00	$32 00	Corn, oat middlings, oat hulls, wheat flour, barley, 50 lbs. cottonseed meal per ton and ½ of 1 per cent. salt.	As certified, ...	6727
4.40	3.25	10.52	9.00	30 00	Corn, barley, wheat flour, oatmeal mill by-product (oat hulls, oat shorts and oat middlings), 50 lbs. cottonseed meal per ton and ½ of 1 per cent. salt.	As certified, ...	3970
4.35	3.50	9.82	9.00	1 60	Corn, oatmeal mill by-product (oat shorts, oat hulls and oat middlings), wheat flour, barley, 50 lbs. cottonseed meal per ton and ½ of 1 per cent. salt.	As certified, ...	4002
4.35	4.00	11.13	9.00	32 00	Corn, oat middlings, oat hulls, wheat flour, barley, 50 lbs. cottonseed meal per ton and ½ of 1 per cent. salt.	As certified, ...	3713
5.30	3.25	9.80	9.00	30 50	Corn, barley, wheat flour, oatmeal mill by-product (oat hulls, oat shorts and oat middlings), 50 lbs. cottonseed meal per ton and ½ of 1 per cent. salt.	As certified, ...	4128
5.10	3.25	9.87	9.00	1 60	Corn, oatmeal mill by-product (oat shorts, oat hulls and oat middlings), wheat flour, barley, 50 lbs. cottonseed meal per ton and ½ of 1 per cent. salt.	As certified, ...	4588
4.78	3.25	9.79	9.00	1 40	Corn, oatmeal mill by-product (oat shorts, oat hulls and oat middlings), wheat flour, barley, 50 lbs. cottonseed meal per ton and ½ of 1 per cent. salt.	As certified, ...	5188
4.70	3.25	11.52	9.00	32 00	Corn, oatmeal mill by-product (oat shorts, oat hulls and oat middlings), wheat flour, barley, 50 lbs. cottonseed meal per ton and ½ of 1 per cent. salt.	As certified, ...	4494
5.06	3.25	10.22	9.00	29 00	Corn, oatmeal mill by-product (oat shorts, oat hulls and oat middlings), wheat flour, barley, 50 lbs. cottonseed meal per ton and ½ of 1 per cent. salt.	As certified, ...	4967
4.15	4.00	9.99	9.00	32 00	Corn, oat middlings, oat hulls, wheat flour, barley, 50 lbs. cottonseed meal per ton and ½ of 1 per cent. salt.	As certified, ...	4533
4.20	3.25	10.74	9.00	30 00	Corn, oat middlings, oat hulls, wheat flour, barley, 50 lbs. cottonseed meal per ton and ½ of 1 per cent. salt.	As certified, ...	3985

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
4721	Schumacher Stock Feed, The Quaker Oats Co., Chicago, Ill.	Munson Station, Jacob Smutzinger.	1021	9.07	10.50	10.00
4571	Schumacher Stock Feed, The Quaker Oats Co., Chicago, Ill.	Huntingdon, Stouffer & Brenneman.	871	8.36	11.81	10.00
5055	Schumacher Stock Feed, The Quaker Oats Co., Chicago, Ill.	Union City, Union Coal and Supply Co,	1355	7.82	10.88	10.00
4184	Schumacher Stock Feed, The Quaker Oats Co., Chicago, Ill.	Christiana, B. Frank Walter.	484	8.75	10.31	10.00
5120	Schumacher Stock Feed, The Quaker Oats Co., Chicago, Ill.	Windber, Weaver & Berkey,	1420	9.01	10.13	10.00
3811	Schumacher Stock Feed, The Quaker Oats Co., Chicago, Ill.	Athens, J. J. Weller, ...	111	7.91	11.00	10.00
4342	Schumacher Stock Feed, The Quaker Oats Co., Chicago, Ill.	Lock Haven, E. E. Wentz,	642	8.95	11.38	10.00
4827	Schumacher Stock Feed, The Quaker Oats Co., Chicago, Ill.	Port Royal, Wisehaupt & Frazer.	587	9.50	10.63	10.00
		Average, ...	....	8.52	10.79	....
5136	Victor Feed, The Quaker Oats Co., Chicago, Ill.	Washington, D. P. Hart,..	1436	9.40	8.31	8.00
4243	Victor Feed, The Quaker Oats Co., Chicago, Ill.	Coatesville, P. D. Handwork Co.	543	9.15	8.31	8.00
3993	Victor Feed, The Quaker Oats Co., Chicago, Ill.	Jeannette, Keystone Supply Co.	293	9.16	8.31	8.00

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
3.75	3.25	9.85	9.00	$32 00	Corn, oatmeal mill by-product (oat shorts, oat hulls and oat middlings), wheat flour, barley, 50 lbs. cottonseed meal per ton and ½ of 1 per cent. salt.	As certified, ...	4721
4.73	3.25	10.74	9.00	29 00	Corn, oatmeal mill by-product (oat shorts, oat hulls and oat middlings), wheat flour, barley, 50 lbs. cottonseed meal per ton and ½ of 1 per cent. salt.	As certified, ...	4571
4.30	3.25	10.25	9.00	1 35	Corn, barley, wheat flour, oatmeal mill by-product (oat hulls, oat shorts and oat middlings), 50 lbs. cottonseed meal per ton and ½ of 1 per cent. salt.	As certified, ...	5055
4.28	3.25	11.28	9.00	30 00	Corn, oat middlings, oat hulls, wheat flour, barley, 50 lbs. cottonseed meal per ton and ½ of 1 per cent. salt.	As certified, ...	4184
3.85	3.25	9.85	9.00	1 35	Corn, oatmeal mill by-product (oat shorts, oat hulls and oat middlings), wheat flour, barley, 50 lbs. cottonseed meal per ton and ½ of 1 per cent. salt.	As certified, ...	5120
4.58	4.00	11.46	10.00	1 65	Corn, barley, wheat flour, oat hulls, oat shorts, oat middlings, cottonseed meal and ½ pound of salt per sack.	As certified, ...	3811
5.15	3.25	8.20	9.00	32 00	Corn, oatmeal mill by-product (oat shorts, oat hulls and oat middlings), wheat flour, barley, 50 lbs. cottonseed meal per ton and ½ of 1 per cent. salt.	As certified, ...	4342
3.53	3.25	8.70	9.00	32 00	Corn, oatmeal mill by-product (oat shorts, oat hulls and oat middlings), wheat flour, barley, 50 lbs. cottonseed meal per ton and ½ of 1 per cent. salt.	As certified, ...	4287
4.50	....	10.12	....	30 53			
4.55	3.50	8.55	9.00	25 00	Corn, oatmeal mill by-product (oat shorts, oat hulls and oat middlings) and ½ of 1 per cent. salt.	As certified, ...	5136
4.58	3.50	9.35	9.00	29 00	Corn, oatmeal mill by-product (oat shorts, oat hulls and oat middlings) and ½ of 1 per cent. salt.	As certified, ...	4243
4.66	3.50	8.58	9.00	30 00	Corn, oat middlings, oat hulls, and one-half of one per cent. salt.	As certified, ...	3998

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
3964	Victor Feed, The Quaker Oats Co., Chicago, Ill.	Derry, J. O. Nicely, ------	264	9.71	8.50	8.00
5001	Victor Feed, The Quaker Oats Co., Chicago, Ill.	Sharon, Smith & Kelly, --	1301	8.50	8.81	8.00
4358	Victor Feed, The Quaker Oats Co., Chicago, Ill.	Gettysburg, C. M. Wolf, Jr.	658	9.56	11.13	8.00
		Average, ----------------------		9.24	8.90	--------
5172	White Diamond Feed, The Quaker Oats Co., Chicago, Ill.	Carnegie, C. A. Foster, -	1472	9.68	8.19	8.00
4943	Stock Feed, Scranton Flour and Grain Co., Scranton, Pa.	Scranton, Scranton Flour and Grain Co.	1243	10.21	9.69	7-10
4931	Stock Feed, Scranton Flour and Grain Co., Scranton, Pa.	Scranton, J. H. Trovell & Co.	1231	10.46	9.56	7-10
		Average, ----------------------		10.33	9.63	--------
3776	Sugarine Dairy Feed, The Sugarine Co., Chicago, Ill.	Great Bend, Albert Bott,	76	11.20	16.34	16.50
4822	Sugarine Dairy Feed, The Sugarine Co., Chicago, Ill.	Danville, Haney-Frazier Milling Co.	1122	12.80	16.81	16.50
3759	Sugarine Dairy Feed, The Sugarine Co., Chicago, Ill.	Montrose, J. C. Harrington.	59	12.99	15.38	16.50
4274	Sugarine Dairy Feed, The Sugarine Co., Chicago, Ill.	West Chester, C. C. Hipple & Son.	574	11.62	16.16	16.50
4651	Sugarine Dairy Feed, The Sugarine Co., Chicago, Ill.	Altoona, Klepser Bros., --	951	9.24	17.26	16.50
4224	Sugarine Dairy Feed, The Sugarine Co., Chicago, Ill.	Hanover, C. F. Miller, ---	524	10.79	16.63	16.50

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
5.05	3.50	8.67	9.00	$1 65	Corn, oat middlings, oat hulls, and one-half of one per cent. salt.	As certified, ...	3964
5.10	3.50	9.29	9.00	1 50	Corn, oatmeal mill by-products (oat shorts, oat hulls, oat middlings), and one-half of one per cent. salt.	As certified, ...	5001
3.95	3.50	9.95	9.00	1 45	Corn, oatmeal mill by-products (oat shorts, oat hulls, oat middlings), and one-half of one per cent. salt.	As certified, ...	4858
4.65	....	9.06	....	29 33			
3.75	3.25	6.89	9.00	21 00	....	Corn, oat middlings, oat shorts and oat hulls.	5172
3.02	3-5	9.52	5-10	1 35	Corn or hominy, oat feed, wheat feed and molasses.	As certified, ...	4943
3.15	3-5	4.62	5-10	1 35	Corn or hominy, oat feed, wheat feed and molasses.	Corn, oat feed and wheat feed.	4931
3.09	....	7.07	....	27 00			
5.66	3.50	10.60	12.00	1 35	Cottonseed meal, oats, barley, wheat, grain screenings, molasses and one-half of one per cent. salt.	Cottonseed meal, oats, barley, wheat grain screenings, molasses, salt and small amount of weed seeds.	3776
5.59	3.50	12.28	12.00	25 00	Cottonseed meal, oats, barley, wheat, grain screenings, malt sprouts, molasses and one-half of one per cent. salt.	Cottonseed meal, oats, barley, wheat, grain screenings, malt sprouts, molasses, salt and weed seeds.	4822
5.60	3.50	11.41	12-00	1 40	Cottonseed meal, oats, barley, wheat, grain screenings, malt sprouts, molasses and one-half of one per cent. salt.	Cottonseed meal, oats, barley, wheat, grain screenings, malt sprouts, molasses, salt and considerable proportion of weed seeds.	3759
5.45	3.50	12.65	12.00	26 00	Cottonseed meal, oats, barley, wheat, grain screenings, malt sprouts, molasses and one-half of one per cent. salt.	Cottonseed meal, oats, barley, wheat, grain screenings, malt sprouts, molasses, salt and small amount of weed seeds.	4274
4.91	3.50	13.08	12.00	27 00	Cottonseed meal, oats, barley, wheat, grain screenings, malt sprouts, molasses and one-half of one per cent. salt.	Cottonseed meal, oats, barley, wheat, grain screenings, malt sprouts, molasses, salt and small amount of weed seeds.	4651
4.99	3.50	13.22	12.00	1 35	Cottonseed meal, oats, barley, wheat, grain screenings, molasses and one-half of one per cent. salt.	Cottonseed meal, oats, barley, wheat, grain screenings, malt sprouts, molasses, salt and considerable proportion of weed seeds.	4224

TABLE IX.—ANALYSES OF SAMPLES OF

hief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
4688	Sugarine Dairy Feed, The Sugarine Co., Chicago, Ill.	Hollidaysburg, Thermic Coal & Supply Co.	988	8.92	10.12	10.00
		Average, ...	....	11.08	15.53	....
4907	Star Feed, The Toledo Elevator Co., Toledo, Ohio.	Hazleton, George W. Engle.	1207	9.91	8.56	8-10
4205	Star Feed, The Toledo Elevator Co., Toledo, Ohio.	York, Mitzel & Sloat, ----	505	9.44	9.19	8-10
4161	Star Feed, The Toledo Elevator Co., Toledo, Ohio.	Ephrata, S. M. Seldomridge.	461	9.60	9.69	8-10
4497	Star Feed, The Toledo Elevator Co., Toledo, Ohio.	Reading, Wertz Milling Co.	797	9.94	8.56	8-10
		Average, ...	....	9.72	9.00	....
4258	Hammond Dairy Feed, The Western Grain Products Co., Hammond, Ind.	West Chester, I. H. Bailey,	558	11.38	17.85	17.00
4753	Hammond Dairy Feed, The Western Grain Products Co., Hammond, Ind.	Sunbury, Blank & Gottshall.	1053	12.81	17.06	17.00
4837	Hammond Dairy Feed, The Western Grain Products Co., Hammond, Ind.	Bloomsburg, Bloomsburg Roller Mills.	-1137	12.87	15.30	17.00
3842	Hammond Dairy Feed, The Western Grain Products Co., Hammond, Ind.	Wellsboro, Geo. C. & F. A. Brooks.	142	9.66	15.91	17.00
4454	Hammond Dairy Feed, The Western Grain Products Co., Hammond, Ind.	Lebanon, City Flouring Mills.	754	10.52	14.32	17.00

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
3.83	3.50	9.34	12.00	$1 50	Corn, oats, barley, wheat, grain screenings, molasses and one-half of one per cent. salt.	Corn, oats, barley, wheat grain screenings, molasses, salt and small amount of weed seeds.	4688
5.15	....	11.79	....	27 14			
6.75	6-7	8.47	9.00	1 30	Hominy feed, corn, ground corn cob and one-half of one per cent. salt.	As certified, ...	4907
6.66	6-7	9.72	9.00	28.00	Hominy feed, corn, ground corn cob and one-half of one per cent. salt.	As certified, ...	4906
7.15	6-7	8.85	9.00	26 00	Hominy feed, corn, ground corn cob, and one-half of one per cent. salt.	As certified, ...	4161
6.80	6-7	9.90	9.00	25 00	Hominy feed, corn, ground corn cob and one-half of one per cent. salt.	As certified, ...	4497
6.84	....	9.23	....	26 25			
6.10	3.00	10.48	9.00	27 00	Cottonseed meal, distiller's grains, malt sprouts, mixed broken grains, corn, wheat, oats, barley, pure cane molasses and three-tenths of one per cent. salt.	Cottonseed meal, distillers' grains, malt sprouts, corn, wheat, oats, barley, molasses, salt and weed seeds.	4258
3.99	3.00	10.18	10.00	1 35	Cottonseed meal, distiller's grains, malt sprouts, mixed broken grains, corn, wheat, oats, barley, pure cane molasses and three-tenths of one per cent. salt.	Corn, oats, barley, distillers' grains, cottonseed meal, grain screenings malt sprouts, molasses, salt and weed seeds.	4753
3.84	3.00	12.08	9.00	27 00	Cottonseed meal, distiller's grains, malt sprouts, mixed broken grains, corn, wheat, oats, barley, pure cane molasses and three-tenths of one per cent. salt.	Cottonseed meal, distillers' grains, malt sprouts, corn, wheat, oats, barley, molasses, salt and considerable proportion of weed seeds.	4837
5.97	3.00	10.71	9.00	26 00	Cottonseed meal, distiller's grains, malt sprouts, mixed broken grains, corn, wheat, oats, barley, pure cane molasses and three-tenths of one per cent. salt.	As certified, ...	3842
6.07	3.00	11.69	9.00	26 00	Cottonseed meal, distiller's grains, malt sprouts, mixed broken grains, corn, wheat, oats, barley, pure cane molasses and three-tenths of one per cent. salt.	Cottonseed meal, distillers' grains, malt sprouts, corn, wheat, oats, barley, molasses, salt and a large amount of weed seeds.	4454

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
5057	Hammond Dairy Feed, The Western Grain Products Co., Hammond, Ind.	Union City, Haniel Clark & Co.	1357	10.85	16.19	17.00
3826	Hammond Dairy Feed, The Western Grain Products Co., Hammond, Ind.	Alba, S. S. Cosper, ...	126	13.58	14.98	17.00
4850	Hammond Dairy Feed, The Western Grain Products Co., Hammond, Ind.	Berwick, F. K. Crisman, -	1159	12.23	16.89	17.00
4832	Hammond Dairy Feed, The Western Grain Products Co., Hammond, Ind.	Danville, Danville Milling Co.	1132	15.10	15.33	17.00
3873	Hammond Dairy Feed, The Western Grain Products Co., Hammond, Ind.	Coudersport, Eulalia Milling Co.	173	13.84	16.17	17.00
4478	Hammond Dairy Feed, The Western Grain Products Co., Hammond, Ind.	Myerstown, Z. T. Gingrich.	778	10.89	16.14	17.00
4426	Hammond Dairy Feed, The Western Grain Products Co., Hammond, Ind.	Mechanicsburg, A. B. Harnish.	726	14.49	15.75	17.00
4439	Hammond Dairy Feed, The Western Grain Products Co., Hammond, Ind.	Harrisburg, Hoffer & Garman.	739	12.36	16.53	17.00

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
3.90	3.00	11.17	9.00	$1 25	Cottonseed meal, distiller's grains, malt sprouts, mixed broken grains, corn, wheat, oats, barley, pure cane molasses and three-tenths of one per cent. salt.	Cottonseed meal, distillers' grains, malt sprouts, corn, wheat, oats, barley, molasses, salt and a considerable proportion of weed seeds.	5067
5.82	3.00	11.10	9.00	28 00	Cottonseed meal, distiller's grains, malt sprouts, corn, oats, barley, grain screenings, pure cane molasses and three-tenths of one per cent. salt.	Cottonseed meal, distillers' grains, malt sprouts, corn, oats, barley, grain screenings, pure cane molasses, salt and weed seeds.	3826
4.57	3.00	9.93	9.00	1 35	Cottonseed meal, distiller's grains, malt sprouts, mixed broken grains, corn, wheat, oats, barley, pure cane molasses and three-tenths of one per cent. salt.	Cottonseed meal, distillers' grains, malt sprouts, corn, wheat, oats, barley, molasses, salt and weed seeds.	4859
4.12	3.00	9.87	9.00	25 00	Cottonseed meal, distiller's grains, malt sprouts, mixed broken grains, corn, wheat, oats, barley, pure cane molasses and three-tenths of one per cent. salt.	Cottonseed meal, distillers' grains, malt sprouts, corn, wheat, oats, barley, molasses, salt and weed seeds.	4832
5.22	3.00	10.95	9.00	28 00	Cottonseed meal, distiller's grains, malt sprouts, corn, oats, barley, grain screenings, pure cane molasses and three-tenths of one per cent. salt.	Cottonseed meal, distillers' grains, malt sprouts, grain screenings, corn, oats, barley, molasses, salt, and a large amount of weed seeds.	3873
5.12	3.00	11.64	9.00	1 30	Cottonseed meal, distiller's grains, malt sprouts, corn, oats, barley, grain screenings, pure cane molasses and three-tenths of one per cent. salt.	Cottonseed meal, distillers' grains, malt sprouts, grain screenings, corn, oats, barley, molasses, salt, and a large amount of weed seeds.	4478
4.46	3.00	10.20	9.00	26 50	Cottonseed meal, distiller's grains, malt sprouts, mixed broken grains, corn, wheat, oats, barley, pure cane molasses and three-tenths of one per cent. salt.	Cottonseed meal, distillers' grains, malt sprouts, corn, wheat, oats, barley, molasses, salt and a small amount of weed seeds.	4126
4.35	3.00	9.25	9.00	28 00	Cottonseed meal, distiller's grains, malt sprouts, mixed broken grains, corn, wheat, oats, barley, pure cane molasses and three-tenths of one per cent. salt.	Cottonseed meal, distillers' grains, malt sprouts, corn, wheat, oats, barley, molasses, salt and a considerable proportion of weed seeds.	4439

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
4152	Hammond Dairy Feed, The Western Grain Products Co., Hammond, Ind.	Manheim, B. R. Hollinger,	452	10.75	16.60	17.00
5077	Hammond Dairy Feed, The Western Grain Products Co., Hammond, Ind.	Pottstown, A. K. Kulp, --	1377	11.45	15.95	17.00
4216	Hammond Dairy Feed, The Western Grain Products Co., Hammond, Ind.	York, F. Loucks & Son, -	516	12.08	16.57	17.00
3999	Hammond Dairy Feed, The Western Grain Products Co., Hammond, Ind.	Jeannette, N. C. Maines,-	299	11.02	16.45	17.00
4200	Hammond Dairy Feed, The Western Grain Products Co., Hammond, Ind.	York, Miller Bros., --------	500	12.49	16.04	17.00
4251	Hammond Dairy Feed, The Western Grain Products Co., Hammond, Ind.	Downingtown, E. Vinton Philips.	551	11.36	17.47	17.00
3820	Hammond Dairy Feed, The Western Grain Products Co., Hammond, Ind.	Troy, H. C. Rolison, -----	120	14.51	14.54	17.00
4099	Hammond Dairy Feed, The Western Grain Products Co., Hammond, Ind.	New Brighton, M. H. Stager.	399	12.32	15.10	17.00

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat. Found.	Crude Fat. Guaranteed.	Crude Fiber. Found.	Crude Fiber. Guaranteed.	Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Per ct.	Per ct.	Per ct.	Per ct.				
5.34	3.00	11.41	9.00	$25 00	Cottonseed meal, distiller's grains, malt sprouts, mixed broken grains, corn, wheat, oats, barley, pure cane molasses and three-tenths of one per cent. salt.	Cottonseed meal, distillers' grains, malt sprouts, corn, wheat, oats, barley, molasses, salt and a large amount of weed seeds.	4152
4.59	3.00	10.70	9.00	1 30	Cottonseed meal, distiller's grains, malt sprouts, mixed broken grains, corn, wheat, oats, barley, pure cane molasses and three-tenths of one per cent. salt.	Cottonseed meal, distillers' grains, malt sprouts, corn, wheat, oats, barley, molasses, salt and a considerable proportion of weed seeds.	[illegible]
4.54	3.00	11.23	9.00	1 40	Cottonseed meal, distiller's grains, malt sprouts, mixed broken grains, corn, wheat, oats, barley, pure cane molasses and three-tenths of one per cent. salt.	Cottonseed meal, distillers' grains, malt sprouts, corn, wheat, oats, barley, molasses, salt and a small amount of weed seeds.	4216
4.49	3.00	11.40	9.00	28 00	Cottonseed meal, distiller's grains, malt sprouts, corn, oats, barley, grain screenings, pure cane molasses and three-tenths of one per cent. salt.	Cottonseed meal, distillers' grains, malt sprouts, grain screenings, corn, oats, barley, molasses, salt, and a small amount of weed seeds.	3999
4.96	3.00	11.20	9.00	1 50	Cottonseed meal, distiller's grains, malt sprouts, mixed broken grains, corn, wheat, oats, barley, pure cane molasses and three-tenths of one per cent. salt.	Cottonseed meal, distillers' grains, malt sprouts, corn, wheat, oats, barley, molasses, salt and a large amount of weed seeds.	4200
5.44	3.00	9.40	9.00	25 50	Cottonseed meal, distiller's grains, malt sprouts, mixed broken grains, corn, wheat, oats, barley, pure cane molasses and three-tenths of one per cent. salt.	Cottonseed meal, distillers' grains, malt sprouts, corn, wheat, oats, barley, molasses, salt and a large amount of weed seeds.	4231
5.88	3.00	10.23	9.00	28 00	Cottonseed meal, distiller's grains, malt sprouts, corn, oats, barley, grain screenings, pure cane molasses and three-tenths of one per cent. salt.	Cottonseed meal, distillers' grains, malt sprouts, corn, oats, barley, molasses, salt and weed seeds.	3820
5.92	3.00	11.80	9.00	1 30	Cottonseed meal, distiller's grains, malt sprouts, corn, oats, barley, grain screenings, pure cane molasses and three-tenths of one per cent. salt.	Cottonseed meal, distillers' grains, malt sprouts, grain screenings, corn, oats, barley, molasses, salt, and a large amount of weed seeds.	4099

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
4223	Hammond Dairy Feed, The Western Grain Products Co., Hammond, Ind.	York, Strayer Bros. Co.,	523	9.74	16.45	17.0
3810	Hammond Dairy Feed, The Western Grain Products Co., Hammond, Ind.	Athens, J. J. Weller, ...	110	8.77	15.46	17.00
4082	Hammond Dairy Feed, The Western Grain Products Co., Hammond, Ind.	Martinsburg, John L. Wineland.	982	12.58	15.49	17.00
4230	Hammond Dairy Feed, The Western Grain Products Co., Hammond, Ind.	Hanover, W. J. Young & Co.	530	11.83	16.71	17.00
		Average, ...	....	11.97	16.05	....
4754	Molasses Corn Flakes, The Western Grain Products Co., Hammond, Ind.	Sunbury, Blank & Gottshall.	1054	10.56	23.04	24–26
4423	Molasses Corn Flakes, The Western Grain Products Co., Hammond, Ind.	Mechanicsburg, A. B. Harnish.	723	11.27	21.85	24–26
		Average, ...	....	10.91	22.43	....
4259	"Diamond Cut," Stock Feed, E. S. Woodworth & Co., Minneapolis, Minn.	West Chester, I. H. Bailey,	559	10.96	11.56	11–14
	PROPRIETARY HORSE AND MULE FEEDS.					
5109	Alfalfa Horse Feed, Alfalfa Feed Mills, Philadelphia, Pa.	Philadelphia, Alfalfa Feed Mills.	1409	8.55	11.44	11.50
4630	Horse Chop, Altoona Feed Mills, Altoona, Pa.	Altoona, Altoona Feed Mills.	930	9.21	12.19	10–12
4430	Acme Horse Feed No. 1, American Alfalfa Food Co., Wichita, Kan.	Harrisburg, Mock & Hartman.	730	9.65	14.06	12.00
4115	Sucrene Alfalfa Horse and Mule Feed, American Milling Co., Chicago, Ill.	Lancaster, John W. Eshelman.	415	9.85	12.31	10.00

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
4.70	3.00	11.58	9.00	$26 00	Cottonseed meal, distiller's grains, malt sprouts, mixed broken grains, corn, wheat, oats, barley, pure cane molasses and three-tenths of one per cent. salt.	Cottonseed meal, distillers' grains, malt sprouts, corn, wheat, oats, barley, molasses, salt and a large amount of weed seeds.	4223
5.00	3.00	9.59	....	1 35	....	Cottonseed meal, distillers' grains, malt sprouts, corn, wheat, oats, barley, molasses, salt and weed seeds.	3810
3.42	3.00	10.42	9.00	26 50	Cottonseed meal, distiller's grains, malt sprouts, mixed broken grains, corn, wheat, oats, barley, pure cane molasses and three-tenths of one per cent. salt.	Cottonseed meal, distillers' grains, malt sprouts, corn, wheat, oats, barley, molasses, salt and weed seeds.	4682
5.53	3.00	11.01	9.00	26 00	Cottonseed meal, distiller's grains, malt sprouts, mixed broken grains, corn, wheat, oats, barley, pure cane molasses and three-tenths of one per cent. salt.	Cottonseed meal, distillers' grains, malt sprouts, corn, oats, wheat, barley molasses, salt and weed seeds.	4230
4.98	....	10.77	....	26 74			
10.39	7-9	11.37	10.00	1 45	Broken grains of corn, oats, wheat, barley, cottonseed meal, corn grains and cane molasses.	Cottonseed meal, distillers' grains, malt sprouts, corn, oats, wheat, barley, molasses and small amount of weed seeds.	4754
8.79	7-9	10.25	10.00	31 00	Broken grains of corn, oats, wheat, barley, cottonseed meal, corn grains and cane molasses.	Cottonseed meal, distillers' grains, malt sprouts, corn, oats, wheat, barley, molasses and a large amount of weed seeds.	4423
9.59	....	10.81	....	30 00			
4.50	4.5-5.5	5.40	4.5-6.5	32 00	Corn, barley, rye, middlings and linseed meal.	As certified.	4250
4.50	4.50	10.37	9-10	26 00	Alfalfa, D. B. grains, corn, barley, oats, peanut and linseed meal.	As certified.	5109
4.66	5.00	6.50	9.00	1 55	Corn, hominy, oat middlings, oat hulls, rye middlings and bran.	As certified.	4630
3.85	3.12	13.82	13.00	34 00	Corn, oats, bran, alfalfa, shorts, linseed meal and salt.	As certified.	4430
4.75	3.50	10.89	15.00	30 00	Corn, oats, barley, wheat, buckwheat, alfalfa, linseed meal and ⅓ of 1 per cent. salt.	As certified.	4115

TABLE IX.--ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
3717	Sucrene Alfalfa Horse and Mule Feed, American Milling Co., Chicago, Ill.	Homer City, A. George & Son.	17	10.51	12.19	10.00
4695	Sucrene Alfalfa Horse and Mule Feed, American Milling Co., Chicago, Ill.	Tyrone, Tyrone Fuel and Supply Co.	995	8.09	12.44	10.00
		Average,	--------	9.48	12.31	--------
4642	Sucrene Horse and Mule Feed, American Milling Co., Chicago, Ill.	Altoona, Central Feed Co.,	942	10.81	9.20	10.00
4116	Sucrene Horse and Mule Feed, American Milling Co., Chicago, Ill.	Lancaster, John W. Eshelman.	416	12.31	11.30	10.00
4368	Sucrene Horse and Mule Feed, American Milling Co., Chicago, Ill.	Greencastle, Greencastle Elevator Co.	668	11.52	10.55	10.00
4264	Sucrene Horse and Mule Feed, American Milling Co., Chicago, Ill.	West Chester, E. D. Hemphill.	564	12.92	9.26	10.00
4303	Sucrene Horse and Mule Feed, American Milling Co., Chicago, Ill.	Brookville, Kline's Sifter Mills.	603	13.51	8.83	10.00
3829	Sucrene Horse and Mule Feed, American Milling Co., Chicago, Ill.	Canton, Homer Rockwell, --	129	14.00	9.50	10.00
4696	Sucrene Horse and Mule Feed, American Milling Co., Chicago, Ill.	Tyrone, Tyrone Fuel and Supply Co.	996	10.38	10.16	10.00
		Average,	--------	12.20	9.83	--------
4664	Acme Horse Feed, T. M. Biddle, Altoona, Pa.	Altoona, T. M. Biddle, ---	964	8.62	13.31	8.00
4035	Ubiko Horse and Stock Feed, The J. W. Biles Co., Cincinnati, Ohio.	Monongahela, D. F. Gamble.	335	7.84	18.56	16.00
4844	Horse Chop, Bloomsburg Roller Mills, Bloomsburg, Pa.	Bloomsburg, Bloomsburg Roller Mills.	1144	10.28	10.75	9.00
5102	Horse Feed, Chester Milling Co., Chester, Pa.	Chester, Chester Milling Co.	1402	10.00	11.19	11.81

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
3.95	3.50	11.50	18.00	$31 00	Corn, oats, barley, wheat, buckwheat, alfalfa, linseed meal and ½ of 1 per cent. salt.	As certified, ...	3717
2.95	3.50	15.80	15.00	30 00	Corn, oats, barley, wheat, buckwheat, alfalfa, linseed meal and ½ of 1 per cent. salt.	As certified, ...	4695
3.88	--------	12.73	--------	30 33			
3.49	3.50	9.11	12.00	30 00	Corn, oats, barley, wheat, molasses, mixed broken grains from wheat, oat, buckwheat and barley screenings and ½ of 1 per cent. salt.	Corn, oats, barley, wheat, molasses and mixed broken grains from wheat, oat, buckwheat and barley screenings, salt and small amount of weed seeds.	4642
4.38	3.50	9.24	12.00	30 00	Corn, oats, barley, wheat, grain screenings, molasses and ½ of 1 per cent. salt.	Corn, oats, barley, wheat, malt sprouts, grain screenings molasses, salt and a considerable proportion of weed seeds.	4116
4.41	3.50	9.09	12.00	27 00	Corn, oats, barley, wheat, grain screenings, molasses and ½ of 1 per cent. salt.	Corn, oats, barley, wheat grain, screenings, molasses, salt and a small amount of weed seeds.	4368
3.85	3.50	10.02	12.00	28 00	Corn, oats, barley, wheat, grain screenings, molasses and ½ of 1 per cent. salt.	Corn, oats, barley, wheat grain, screenings, molasses, salt and a small amount of weed seeds.	4264
3.26	3.00	10.16	13.50	29 00	Corn, oats, barley, wheat, grain screenings, molasses and ½ of 1 per cent. salt.	Corn, oats, barley, wheat grain, screenings, molasses, salt and a small amount of weed seeds.	4303
4.22	3.50	9.55	12.00	29 00	Corn, oats, barley, wheat, grain screenings, molasses and ½ of 1 per cent. salt.	As certified, ...	3829
3.45	3.50	10.41	12.00	28 00	Corn, oats, barley, wheat, molasses, mixed broken grains from wheat, oat, buckwheat and barley screenings and ½ of 1 per cent. salt.	Corn, oats, barley, wheat, molasses and mixed broken grains from wheat, oats, buckwheat and barley screenings, salt and a small amount of weed seeds.	4696
3.87	--------	9.65	--------	28 71			
4.33	3.00	7.47	14.00	1 50	Whole grains, also rye oats, hominy, barley and wheat feeds.	Oats, rye, hominy, barley and wheat feed.	4664
7.40	6.00	8.61	9.00	1 75	Wheat middlings, hominy meal, wheat bran, brewers dried grains and old process linseed meal.	As certified, ...	4035
2.87	4.00	2.67	--------	32 00	Corn, oats, rye, wheat and possibly a small amount of rye middlings.	Corn, oats, rye, wheat and rye middlings.	4844
3.59	4.92	7.35	8.10	1 70	Alfalfa meal, cracked corn, oats, barley and oil meal.	As certified, ...	5102

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct
4653	Horse Chop, E. D. Clark, Altoona, Pa.	Altoona, E. D. Clark,	953	8.88	11.88	8-10
4614	Horse Crop, E. D. Clark, Altoona, Pa.	Altoona, J. B. Forsht,	914	9.01	11.69	8-10
		Average,		8.92	11.79	
4450	Summer Excelsior Horse Feed, Edwards & Loomis Co., Chicago, Ill.	Harrisburg, J. H. Sheesley,	750	9.64	11.63	10.00
3908	Daisy Horse Feed, The Great Western Cereal Co., Chicago, Ill.	St. Mary's, L. Ritter,	208	8.81	16.65	12.00
4615	Horse Chop, Hagey Bros., Martinsburg, Pa.	Altoona, J. B. Forsht,	915	9.14	11.44	7-10
4671	Horse Chop, Klepser Bros., Martinsburg, Pa.	Martinsburg, Klepser Bros.,	971	9.47	13.38	7.00
4646	Horse Chop, Klepser Bros., Martinsburg, Pa.	Altoona, Klepser Bros.,	946	9.04	13.38	7.00
		Average,		9.25	13.38	
4908	Badger Alfalfa Horse and Mule Feed, Chas. A. Krause Milling Co., Milwaukee, Wis.	Hazleton, Geo. W. Engle,	1208	17.31	10.62	12.00
4824	Badger Alfalfa Horse and Mule Feed, Chas. A. Krause Milling Co., Milwaukee, Wis.	Danville, Haney-Frazier Milling Co.	1124	18.02	11.41	12.00
5147	Badger Alfalfa Horse and Mule Feed, Chas. A. Krause Milling Co., Milwaukee, Wis.	Washington, G. W. McBrier.	1447	15.57	11.81	12.00
4989	Badger Alfalfa Horse and Mule Feed, Chas. A. Krause Milling Co., Milwaukee, Wis.	Mercer, Mercer Milling and Lumber Co., Ltd.	1289	15.70	11.97	12.00
4681	Badger Alfalfa Horse and Mule Feed, Chas. A. Krause Milling Co., Milwaukee, Wis.	Martinsburg, John L. Wineland.	981	14.88	11.63	12.00
		Average,		16.29	11.49	
3807	Best Feed for Horses, C. P. Matthews & Sons, Inc., Scranton, Pa.	Towanda, C. P. Matthews & Sons, Inc.	107	12.22	11.35	9-10
4874	Best Mixed Feed for Horses, C. P. Matthews & Sons, Inc., Scranton, Pa.	Wilkes-Barre, C. P. Matthews & Sons, Inc.	1174	8.69	12.06	9-10
4935	Best Mixed Feed for Horses, C. P. Matthews & Sons, Inc., Scranton, Pa.	Scranton, C. P. Matthews & Sons, Inc.	1235	9.31	12.19	9-10
		Average,		10.07	11.87	
3973	Alfalfa Horse Feed, McFarland Supply Co., Greensburg, Pa.	Greensburg, McFarland Supply Co.	273	10.34	15.00	11.00

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
4.25	3.5-4.5	7.00	7-9	$30 00	Shelled corn, ear corn, oats, oat middlings, oat shorts, oat hulls, flour middlings and rye middlings.	As certified, ...	4653
4.45	3.5-4.5	7.22	7-9	1 65	Shelled corn, ear corn, oats, oat middlings, oat shorts, oat hulls, flour middlings and rye middlings.	As certified, ...	4614
4.35	....	7.11	....	31 50			
3.88	3.50	8.80	9.00	35 00	Rolled oats and barley, ..	As certified, ...	4450
3.90	2.50	12.01	11.00	28 00	Oats, cottonseed meal, alfalfa meal, oat middlings, grain screenings, N. O. molasses and ¾ of 1 per cent. salt.	Oats, oat hulls, cottonseed meal, alfalfa meal, oat middlings, grain screenings, N. O. molasses and salt.	3908
3.98	3-5	5.35	3-9	33 00	Ear corn, oats, barley and middlings.	As certified, ...	4015
6.53	3.00	6.15	7-9	1 00	Barley feed, rye middlings and hominy meal.	As certified, ...	4671
5.93	3.00	5.55	7-9	31 00	Barley feed, rye middlings and hominy meal.	As certified, ...	4646
6.23	....	5.85	....	31 50			
2.28	3.00	9.17	12.00	1 65	Corn, oats, alfalfa and syrup.	As certified, ...	4908
2.36	3.00	8.53	12.00	1 65	Corn, oats, alfalfa and syrup.	As certified, ...	4824
2.71	3.00	9.93	12.00	33 00	Corn, oats, alfalfa and syrup.	As certified, ...	5147
2.01	3.00	8.83	12.00	30 00	Corn, oats, alfalfa and syrup.	As certified, ...	4989
2.31	3.00	10.09	12.00	30 00	Corn, oats, alfalfa and syrup.	As certified, ...	4681
2.35	....	9.31	....	31 80			
4.28	3-4	4.51	6-7	31 00	Corn, oats, wheat middlings and linseed meal.	As certified, ...	3807
5.75	3-4	6.65	6-7	1 65	Corn, oats, wheat middlings and linseed meal.	As certified, ...	4874
4.63	3-4	6.37	6-7	1 55	Corn, oats, wheat middlings and linseed meal.	As certified, ...	4935
4.89	....	5.84	....	31 67			
4.28	3.00	12.24	15.00	1 60	Corn and oats chop, ground alfalfa meal, bran and oil meals.	As certified, ...	3973

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
4787	McMahan's Prepared Horse Feed, C. H. McMahan, Milton, Pa.	Milton, C. H. McMahan, --	1087	7.41	20.00	18-20
5114	Sugarota Horse Feed, North West Mills Co., Winona, Minn.	Doylestown, H. S. Beidler,	1414	12.12	10.50	10.00
4945	Buffalo Horse Feed, A. Nowak & Son, Buffalo, N. Y.	Nanticoke, Frank Stooks,--	1245	8.63	8.56	7-9
3905	Primo Sylva Horse Feed, Penna. Primo Feed Co., Inc., Harrisburg, Pa.	Ridgway, C. O. Salberg, --	205	9.02	15.25	14.60
5013	Peters' Arab Balanced Horse Feed, M. C. Peters Mill Co., Omaha, Neb.	Oil City, Eenterprise Milling Co.	1313	14.42	10.72	9.00
4044	Peters' Arab Balanced Horse Feed, M. C. Peters Mill Co., Omaha, Neb.	Charleroi, R. C. Mountser,	344	17.84	9.95	9.00
5018	Peters' Arab Balanced Horse Feed, M. C. Peters Mill Co., Omaha, Neb.	Oil City, New Model Milling Co.	1318	14.64	10.64	9.00
4059	Peters' Arab Balanced Horse Feed, M. C. Peters Mill Co., Omaha, Neb.	Pittsburg, The I. W. Scott Co.	359	12.41	11.12	9.00
4963	Peters' Arab Balanced Horse Feed, M. C. Peters Mill Co., Omaha, Neb.	Butler, B. F. Shannon & Co.	1263	10.18	10.35	9.00
		Average, --------------	--------	13.89	10.56	--------
4795	Horse Chop, S. F. Phillips & Son, Milton, Pa.	Milton, S. F. Phillips & Son.	1095	9.28	10.94	--------
5170	Molac Horse Feed, The Quaker Oats Co., Chicago, Ill.	Canonsburg, Dunlap Bros.,	1470	9.13	10.88	10.00
4095	Molac Horse Feed, The Quaker Oats Co., Chicago, Ill.	New Brighton, J. H. Hornby & Sons.	395	16.47	9.70	10.00
4023	Molac Horse Feed, The Quaker Oats Co., Chicago, Ill.	Uniontown, King Bros., --	323	12.47	10.45	10.00
3998	Molac Horse Feed, The Quaker Oats Co., Chicago, Ill.	Jeannette, N. C. Maines, --	298	12.95	9.85	10.00
4060	Molac Horse Feed, The Quaker Oats Co., Chicago, Ill.	Apollo, L. Todd Owens, --	300	12.12	10.50	10.00
4040	Molac Horse Feed, The Quaker Oats Co., Chicago, Ill.	Belle Vernon, Reichard Bros.	340	13.47	10.59	10.00

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
8.25	7-8	9.32	9-10	$1 50	Brewers dried grains, hominy meal, cottonseed meal and middlings.	As certified, ...	4787
3.70	3.00	14.68	14.00	29 00	Malt sprouts, corn, oats, flax bran, barley, oat clips, molasses and a small per cent. of salt.	Malt sprouts, corn, oats, barley, flax plant refuse and shives, oat clips, molasses, salt and a small amount of weed seeds.	5114
3.83	4-5	11.62	10-12	1 65	Hominy, oats, oat hulls, corn and cob.	As certified, ...	4945
3.65	5.11	13.01	10.98	1 65	Corn, bran, malt sprouts, wheat bran, alfalfa, cottonseed meal, corn and oats.	As certified, ...	3905
3.12	2.00	8.02	15.00	1 60	Corn, oats and alfalfa flavored with syrup.	As certified, ...	5013
3.43	2.00	6.66	15.00	33 00	Corn, oats and alfalfa flavored with syrup.	As certified, ...	4044
2.88	2.00	9.56	15.00	32 00	Corn, oats and alfalfa flavored with syrup.	As certified, ...	5018
3.23	2.00	7.10	15.00	34 50	Corn, oats and alfalfa flavored with syrup.	As certified, ...	4050
2.16	2.00	9.12	15.00	32 00	Corn, oats and alfalfa flavored with syrup.	As certified, ...	4963
2.96	....	8.09	....	32 70			
4.53	....	5.30	....	1 70	Cracked corn, cracked oats, cracked rye and wheat bran.	As certified, ...	4795
3.85	3.25	9.52	9.00	1 60	Alfalfa, corn, oats, oatmeal mill by-product (oat shorts, oat hulls, oat middlings), barley, molasses and ½ of 1 per cent. salt.	As certified, ...	5170
2.92	3.25	9.08	9.00	1 50	Alfalfa, corn, oats, oatmeal mill by-product (oat shorts, hulls, oat middlings), barley, molasses and ½ of 1 per cent. salt.	As certified, ...	4095
2.48	3.25	8.74	9.00	1 60	Alfalfa, corn, oats, oat middlings, oat hulls, barley, molasses and ½ of 1 per cent. salt.	As certified, ...	4023
2.51	3.25	8.71	9.00	1 60	Alfalfa, corn, oats, oat middlings, oat hulls, barley, molasses and ½ of 1 per cent. salt.	As certified, ...	3998
3.59	8.25	9.69	10.50	1 65	Alfalfa, corn, oats, oat middlings, oat hulls, barley, molasses and ½ of 1 per cent. salt.	As certified, ...	4060
3.61	8.25	9.95	10.50	1 80	Alfalfa, corn, oats, oat middlings, oat hulls, barley, molasses and ½ of 1 per cent. salt.	As certified, ...	4040

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein. Found.	Crude Protein. Guaranteed.
				Per ct.	Per ct.	Per ct.
5140	Molac Horse Feed, The Quaker Oats Co., Chicago, Ill.	Washington, C. B. Ruch, --	1440	12.38	10.27	10.00
		Average,		12.71	10.32	
4823	Sugarine Horse Feed, The Sugarine Co., Chicago, Ill.	Danville, Haney - Frazier Milling Co.	1123	9.81	10.31	10.00
5078	Chicago Alfalfa Horse and Mule Feed, The Western Grain Products Co., Hammond, Ind.	Pottstown, A. K. Kulp, --	1378	10.38	13.50	10.00
	CALF MEALS.					
3843	Blachford's, J. W. Barwell, Waukegan, Ill.	Wellsboro, Geo. C. & F. A. Brooks.	143	9.06	27.25	25.00
4392	Blachford's, J. W. Barwell, Waukegan, Ill.	Scotland, M. Ickes,	692	10.38	26.31	25.00
4955	Blachford's, J. W. Barwell, Waukegan, Ill.	Butler, H. J. Klingler & Co.	1255	9.75	27.63	25.00
3890	Blachford's, J. W. Barwell, Waukegan, Ill.	Port Allegany, Port Allegany Milling Co.	190	9.75	25.00	25.00
		Average,		9.73	26.55	
3899	Gregson, The Great Western Cereal Co., Chicago, Ill.	Emporium, Emporium Milling Co.	199	8.08	27.25	25.00
5042	Schumacher, The Quaker Oats Co., Chicago, Ill.	Titusville, L. S. Clark, --	1342	8.00	19.56	14.00
3950	Schumacher, The Quaker Oats Co., Chicago, Ill.	Warren, T. N. Dunham, --	250	8.97	19.88	19.00
4613	Schumacher, The Quaker Oats Co., Chicago, Ill.	Altoona, J. B. Forsht, ---	913	8.42	20.81	19.00
4081	Schumacher, The Quaker Oats Co., Chicago, Ill.	Kittanning, J. A. Gault & Co.	381	8.51	19.94	19.00
3714	Schumacher, The Quaker Oats Co., Chicago, Ill.	Homer City, A. George & Son.	14	8.41	19.75	19.00
3996	Schumacher, The Quaker Oats Co., Chicago, Ill.	Jeannette, Keystone Supply Co.	296	8.61	19.56	19-21
		Average,		8.48	19.92	
	MISCELLANEOUS FEEDS.					
3737	Mixed Feed, Barnesboro Milling Co., Barnesboro, Pa.	Barnesboro, Barnesboro Milling Co,	37	11.90	9.94	4-8.50

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
3.39	3.25	9.19	9.00	$1 55	Alfalfa, corn, oats, oatmeal mill by-product (oat shorts, hulls, oat middlings), barley, molasses and ½ of 1 per cent. salt.	As certified, ...	5140
3.19	....	9.26	....	32 29			
3.23	3.50	10.30	12.00	28 00	Corn, oats, barley, wheat, molasses and oats, barley and wheat screenings and ½ of 1 per cent. salt.	Corn, oats, barley, wheat, molasses and oats, barley and wheat from screenings, salt and a small amount of weed seeds.	4823
3.35	3.00	12.83	15.00	1 55	Corn, oats, alfalfa, linseed meal and cane molasses.	As certified, ...	5078
5.90	5.00	5.07	5.00	3 50	Locust bean meal, wheat flour, flaxseed, cottonseed meal, peas, beans and lentils.	As certified, salt present.	3843
5.25	5.00	5.07	....	3 75	....	Cottonseed meal, flaxseed meal, locust bean meal, wheat flour, peas, beans, lentils and salt.	4392
5.15	5.00	5.17	5.00	3 50	Locust bean meal, wheat flour, flaxseed, peas, beans and lentils.	As certified, salt present.	4955
4.93	5.00	7.02	5.00	3 50	Locust bean meal, wheat flour, flaxseed, cottonseed meal, peas, beans and lentils.	As certified, salt present.	3890
5.31	....	5.58	....	3 56			
7.15	5.00	6.83	5.00	3 00	....	Cottonseed meal, linseed meal, bean meal, oatmeal, wheat flour, leguminous seeds and salt.	3899
9.25	8.00	2.85	3.00	3 25	Oatmeal wheatmeal, ground flaxseed and casein.	As certified, ...	5042
8.93	8.00	2.97	3.00	5 00	Oatmeal, wheatmeal, ground flaxseed and casein.	As certified, ...	3950
8.85	8.00	2.17	3.00	4 00	....	Oatmeal, wheatmeal, flaxseed and casein.	4613
8.60	8.00	3.56	3.00	3 50	....	Oatmeal, wheatmeal, flaxseed and casein.	4081
9.28	8.00	2.96	3.00	3 50	Oatmeal, wheatmeal, ground flaxseed and casein.	Oatmeal, wheatmeal, flaxseed buckwheat and casein.	3714
7.55	8-9.5	1.71	3.00	3 50	Oatmeal, wheatmeal, ground flaxseed and casein.	As certified, ...	3906
8.74	....	2.70	....	3 71			
3.78	2-2.50	3.20	2-5	28 00	Corn and oats screenings.	Corn, oats, trace of barley and buckwheat hulls.	3737

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
3732	Barley Feed, Deutsch & Sickert Co., Milwaukee, Wis.	Patton, F. E. Farabaugh,	32	8.87	14.88	13.00
4174	Flaxo Meal, C. E. Dingwall Co., Milwaukee, Wis.	Elizabethtown, E. H. Lehman.	474	8.40	15.88	15.00
4190	Flaxo Meal, C. E. Dingwall Co., Milwaukee, Wis.	Bird-in-hand, J. A. Umble & Bro.	490	7.65	17.50	15.00
		Average,	--------	8.02	16.69	--------
4704	No. 1 Mixed Feed, Feed Grain Co., Philipsburg, Pa.	Philipsburg, Feed Grain Co.	1004	10.08	12.69	6-8
4593	Graino Barley Feed, The Great Western Cereal Co., Chicago, Ill.	Bedford, N. M. Diehl, ---	893	7.27	11.06	10.00
4065	Imperial Feed Meal, The Imperial Grain and Milling Co., Toledo, Ohio.	Vandergrift, T. J. Rowley.	365	10.58	7.06	7.00
3736	Pure Eagle Barley Feed, J. B. A. Kern & Sons, Milwaukee, Wis.	Barnesboro, Barnesboro Milling Co.	36	8.76	12.88	13.75
3734	Pure Eagle Barley Feed, J. B. A. Kern & Sons, Milwaukee, Wis.	Hastings, Hastings Mill, --	34	9.30	14.31	13.75
4096	Pure Eagle Barley Feed, J. B. A. Kern & Sons, Milwaukee, Wis.	New Brighton, J. H. Hornby & Sons.	396	10.22	13.13	13.75
4409	Eagle Barley Feed, J. B. A. Kern & Sons, Milwaukee, Wis.	Carlisle, S. B. Jackson, --	709	9.06	12.13	13.75
		Average,	--------	9.33	13.11	--------
5107	Kornfalfa Feed, Kornfalfa Feed Milling Co., Kansas City, Mo.	Chester, T. F. McCall, ---	1407	9.11	11.63	11.00
4937	Mixed Feed, C. P. Matthews & Sons, Inc., Scranton, Pa.	Scranton, C. P. Matthews & Sons, Inc.	1237	9.59	9.88	7-9
4870	Mixed Feed, C. P. Matthews & Sons, Inc., Scranton, Pa.	Wilkes-Barre, C. P. Matthews & Sons, Inc.	1170	9.20	9.75	7-9
		Average,	--------	9.39	9.82	--------
3804	Mixed Feed, C. P. Matthews & Sons, Inc., Scranton, Pa.	Monroeton, C. P. Matthews & Sons, Inc.	104	13.77	10.88	--------
4785	Milk and Muscle Producer, C. H. McMahan.	Milton, C. H. McMahan, --	1085	7.11	24.31	23-25
4786	Special Pig Grower, C. H. McMahan.	Milton, C. H. McMahan, --	1086	7.59	15.69	15-15.[illegible]
3733	Barley, John H. Miller's Sons, Tyrone, Pa.	Patton, F. E. Farabaugh,	33	11.26	13.50	--------
4677	Barley Feed, Allen V. Smith, Marcellus Falls, N. Y.	Martinsburg, Klepser Bros.,	977	8.15	15.56	12-15
4133	Prime Cotton Seed Feed, Southern Fibre Co., Portsmouth, Va.	Lititz, Aaron G. Hershey,--	433	6.94	6.25	10.00
4247	Prime Cotton Seed Feed, Southern Fibre Co., Portsmouth, Va.	Parkesburg, E. H. Keen & Co.	547	6.32	6.44	10.00
		Average,	--------	6.63	6.35	--------

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
4.05	3.00	10.30	9.00	$28 00	....	Barley and small amount of oats.	3732
13.05	12.00	11.85	12.50	26 50	Pure ground flax screenings.	As certified, ...	4174
11.35	12.00	11.80	12.50	26 50	Pure ground flax screenings.	As certified, ...	4190
12.20	....	11.82	....	26 50			
6.30	4–6	4.75	9.00	1 70	Ear corn, corn, oats, oat hulls, wheat middlings, hominy meal and salt.	As certified, ...	4704
6.30	4.00	11.39	9.00	1 45	Corn, oats, barley, cottonseed meal, red dog flour, oat shorts, oat hulls and maximum salt ¾ of 1 per cent.	As certified, ...	4598
3.53	2.50	8.11	9.00	1 60	Ear corn and ½ of 1 per cent. salt.	As certified, ...	4065
4.35	4.00	8.75	9.04	30 00	....	Barley, buckwheat and trace of oats.	3736
4.20	4.00	9.20	9.04	31 00	....	Barley and small amount of oats.	3734
4.20	4.00	9.68	9.04	1 45	....	Barley, ...	4096
4.00	4.00	9.30	9.01	1 50	Pure eagle barley feed, ..	As certified, ...	4409
4.19	....	9.22	....	30 00			
4.13	4.00	10.17	12.00	1 70	Alfalfa, corn and oats, ..	As certified, ...	5107
4.40	4–6	5.97	5–6	1 35	Hominy, corn and oat feed.	As certified, ...	4937
4.85	4–6	5.57	5–6	1 40	Hominy, corn and oat feed.	As certified, ...	4870
4.63	....	5.77	....	27 50			
2.33	....	4.32	....	1 25	Ear corn, rye, oats, buckwheat and shelled corn.	As certified, ...	3804
7.25	7–9	10.45	10–11	31 00	Brewers' dried grains, malt sprouts, cottonseed meal and hominy meal.	As certified, ...	4785
8.85	8–8.50	7.37	6–7	1 50	Brewers' dried grains, hominy meal, malt sprouts, distillers' dried grains and cottonseed meal.	As certified, ...	4786
2.85	....	6.32	....	....	....	Barley, ...	3733
4.68	3–5	10.95	7–12	1 50	....	Barley, ...	4077
2.65	1.80	34.46	35.00	21 00	Cottonseed meal and cottonseed hulls.	As certified, ...	4183
1.56	1.80	30.50	35.00	22 00	Cottonseed meal and cottonseed hulls.	As certified, ...	4047
2.11	....	32.48	....	21.50			

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
1444	"Boveta Brand," Cottonseed Hull and Meal Mixture, Southern Oil Co., Charlotte, N. C.	Middletown, Mumma & Snavely.	744	7.62	17.25	17.00
4736	Ordinary Feed Meal, The Toledo Grain and Milling Co., Toledo, Ohio.	Du Bois, S. A. Eisenman,	1036	10.31	8.94	7.50-9
3705	Ordinary Feed Meal, The Toledo Grain and Milling Co., Toledo, Ohio.	Blairsville, Smith & McKelvey.	5	12.75	8.13	7.50-9
4716	Ordinary Feed Meal, The Toledo Grain and Milling Co., Toledo, Ohio.	Munson Station, Jacob Smutzinger.	1016	9.99	8.19	7-9
		Average,	--------	11.01	8.42	--------
4496	Mixed Feed, Wertz Milling Co., Reading, Pa.	Reading, Wertz Milling Co.,	796	7.77	11.06	10.00
4488	Mixed Feed, Wertz Milling Co., Reading, Pa.	Reading, Aug. C. Wertz & Bro.	788	9.20	11.38	10.00
		Average,	--------	8.48	11.22	--------
	MISCELLANEOUS CHOP FEEDS.					
	Corn Chops.					
3885	Corn Meal, Acme Milling Co., Olean, N. Y.	Coudersport, Gates Bros.,	185	17.15	8.06	--------
5171	Coarse Corn Meal, The D. G. Bamford Milling Co., Midway, Pa.	Carnegie, C. A. Foster,	1471	11.93	8.50	--------
4809	Corn Chop, Buffalo Flour Milling Co., Lewisburg, Pa.	Lewisburg, Buffalo Flour Milling Co.	1109	10.65	10.38	--------
4656	Superior Corn Feed Meal, E. D. Clark, Altoona, Pa.	Altoona, E. D. Clark,	956	9.68	8.88	10.00
3925	Feed Meal, Delp, Ettinger & Co., Bourbon, Ind.	Johnsonburg, Cash Wholesale Co.	225	12.67	9.19	--------
3942	Corn Meal, C. L. Douglass, Bradford, Pa.	Bradford, C. L. Douglass,	242	17.81	7.81	--------
3946	Feed Meal, T. N. Dunham, Warren, Pa.	Warren, T. N. Dunham,	246	16.70	8.19	--------
5038	Unbolted Corn Meal, Emlenton Milling Co., Ltd., Emlenton, Pa.	Emlenton, Emlenton Milling Co., Ltd.	1338	10.50	8.88	--------
4905	Yellow Corn Chop, Geo. W. Engle, Hazleton, Pa.	Hazleton, John G. Seager's Sons.	1205	10.35	8.94	--------
3933	Corn Meal, L. A. Fischer & Co., Bradford, Pa.	Bradford, L. A. Fischer & Co.	233	18.07	8.25	--------
4703	Pure Corn Meal, Globe Elevator Co., Buffalo, N. Y.	Philipsburg, Feed Grain Co.	1003	12.00	8.38	8-10
4830	Corn Chop, Haney-Frazier Milling Co., Danville, Pa.	Danville, Haney-Frazier Milling Co.	1130	10.96	8.56	--------
3823	Husted Yellow Feed Meal, Husted Milling Co., Buffalo, N. Y.	Alba, S. S. Cosper,	123	13.84	8.94	--------
3966	Corn Chop, Latrobe Wholesale Grocery Co., Latrobe, Pa.	Latrobe, Latrobe Wholesale Grocery Co.	266	16.27	8.44	--------
4946	Corn Meal, A. Nowak & Son, Buffalo, N. Y.	Nanticoke, Frank Stooks,	1246	11.35	8.25	--------
4792	Corn Chop, S. F. Phillips & Son, Milton, Pa.	Milton, S. F. Phillips & Son.	1092	9.78	9.44	--------
		Average,	--------	13.10	8.69	--------

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
3.50	3.00	27.75	40.00	$26 50	Cottonseed meal and hulls.	As certified,	4444
4.50	3.50–4.50	1.97	6–8	1 50	Yellow shelled and yellow ear corn.	As certified,	4736
4.13	3.50–4.50	3.76	6–8	32 00	Yellow shelled and yellow ear corn.	As certified,	3705
4.10	3.50–4.50	5.45	6–8	28 00	Yellow shelled and yellow ear corn.	As certified,	4716
4.24	....	3.72	....	30 00			
5.08	3.00	4.55	9.00	30 00	Corn, oats, rye and middlings.	As certified,	4496
5.00	3.00	5.20	9.00	1 50	Corn, oats, rye bran and middlings.	As certified,	4488
5.04	....	4.87	....	30 00			
3.00	....	1.84	....	1 50	Corn,	As certified,	3885
4.25	....	1.83	....	26 00	Corn meal,	As certified,	5171
4.20	....	2.17	....	29 00	Corn,	As certified,	4800
4.60	3.00	2.25	15.00	1 55	....	Corn,	4656
4.30	....	1.90	....	33 00	Yellow corn,	As certified,	3925
3.55	....	1.87	....	28 00	Corn,	As certified,	3942
3.95	....	2.10	....	27 00	Corn,	As certified,	3946
4.15	....	1.92	....	27 00	Pure unbolted corn meal,	As certified,	5038
4.10	....	2.02	....	1 40	Yellow corn chop,	As certified,	4905
3.35	....	1.92	....	28 00	Corn,	As certified,	3983
2.98	4–5	1.25	2–3	1 60	Pure corn meal,	As certified,	4708
3.85	....	1.85	....	1 50	Corn,	As certified,	4830
5.22	....	2.40	....	30 00	....	Corn,	3823
3.00	....	2.01	....	29 00	Pure corn chop,	Corn, trace of oats and salt.	3966
3.65	....	1.50	....	1 50	....	Corn,	4946
4.40	....	2.20	....	1 50	Corn,	As certified,	4792
3.91	....	19.39	....	29 25			

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
	Corn and Oats Chops.					
5067	Corn and Oats Chop, A. P. Allen, Erie, Pa.	Erie, A. P. Allen,	1367	10.86	10.31	....
3859	A Chop, The Birkett Mills, Penn Yan, N. Y.	Westfield, L. Plank,	159	11.02	10.56	9.10
4764	Pure Corn and Oats Chop, Blank & Gottshall, Sunbury, Pa.	Sunbury, Blank & Gottshall.	1064	9.67	9.19	....
4780	Corn and Oat Chop, Wm. F. Braun, Milton, Pa.	Milton, E. Datesman,	1080	10.14	9.81	4–6
3764	Mixed Chop, Brown & Fassett, Tunkhannock, Pa.	Montrose, Brown & Fassett.	64	12.02	9.44	9.79
4808	Corn and Oats Chop, Buffalo Flour Milling Co., Lewisburg, Pa.	Lewisburg, Buffalo Flour Milling Co.	1108	10.25	9.06	....
4779	Mix Chop, Buffalo Milling Co., Lewisburg, Pa.	Milton, Thomas R. Hull,	1079	10.46	9.38	....
3813	No. 1 Feed, Cayuta Mills, Sayre, Pa.	Sayre, Cayuta Mills,	113	13.65	9.56	....
4417	Corn and Oats Chop, Chas. T. Coyle, Mt. Holly Springs, Pa.	Mt. Holly Springs, J. N. Weigel.	717	9.88	10.06	....
3796	Chop, Crescent Roller Mill, Ulster, Pa.	Ulster, Crescent Roller Mill,	96	12.10	9.50	....
5010	Corn and Oats Feed, Crouch Bros. Co., Erie, Pa.	Oil City, Clyde D. Duffee,	1310	9.47	9.81	8.75
3922	Corn and Oats Feed, Crouch Bros. Co., Erie, Pa.	Swanson Grocery Co.,	222	12.28	9.31	8.75
4318	Corn and Oats Chop, Dayton Milling Co., Towanda, Pa.	Williamsport, Gohl & King.	618	10.72	8.88	7-11
3941	Corn and Oats Feed, C. L. Douglass, Bradford, Pa.	Bradford, C. L. Douglass.	241	14.48	9.56	....
4867	Corn and Oats Chop, Duncannon Flouring Mill Co., Duncannon, Pa.	Duncannon, Duncannon Flouring Mill.	1167	10.89	9.00	....
3945	Corn and Oats Feed, T. N. Dunham, Warren, Pa.	Warren, T. N. Dunham,	245	12.89	9.81	....
4741	Corn and Oats Chop, J. W. Eberts, Clearfield, Pa.	Clearfield, J. W. Eberts,	1041	9.70	9.31	7–15
4279	Corn and Oat Chop, Elder & Eckbert, Lewistown, Pa.	Lewistown, Elder & Eckbert.	579	10.83	9.31	....
3849	C. & O. Feed, Elkland Roller Mills, Elkland, Pa.	Wellsboro, Max Bernkopf & Bro.	149	10.31	9.06	6–10
5014	Pure Corn and Oats Chop, Enterprise Milling Co., Oil City, Pa.	Oil City, Enterprise Milling Co.	1314	10.55	10.81	....
4583	Mixed Chop, J. E. Ewing, Mt. Union, Pa.	Mt. Union, J. E. Ewing,	883	11.41	9.00	....
3932	Corn and Oat Feed, L. A. Fischer & Co., Bradford, Pa.	Bradford, L. A. Fischer & Co.	232	14.01	9.88	....
4344	Corn and Oats Chop, Foresman & Kelsey Milling Co., Flemington, Pa.	Flemington, Foresman & Kelsey Milling Co.	644	11.42	8.94	10–13
3958	Corn and Oats Chop, John H. Fuellhart, Youngsville, Pa.	Youngsville, John H. Fuellhart.	253	13.33	9.38	....
4915	Chop, Gibbs Milling Co., Nanticoke, Pa.	Nanticoke, Gibbs Milling Co.	1215	8.39	9.38	10.50
3903	Corn and Oats Chop, Goods Mills, Newberry, Pa.	Emporium, O. B. Howard & Co.	208	13.77	8.94	....

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
4.35	....	3.82	....	$25 00	Corn and oats, ...	As certified, ...	5067
4.50	3.75	4.87	6.00	1 75	Corn and oats, ...	As certified, ...	3859
4.30	....	4.75	....	1 50	Corn and oats, ...	As certified, ...	4764
4.40	2-5	4.32	....	1 60	Corn and oats, ...	As certified, ...	4780
4.05	4.61	5.07	....	1 65	Corn and oats, ...	As certified, ...	3764
4.28	....	3.07	....	31 00	Corn and oats, ...	As certified, ...	4808
4.25	....	3.22	....	1 70	Corn and oats, ...	As certified, ...	4779
2.95	....	4.10	....	33 00	Corn and oats, ...	As certified, ...	3813
4.48	....	3.45	....	1 80	Corn and oats, ...	As certified, ...	4417
4.00	....	4.46	....	32 00	Corn and oats, ...	As certified, ...	3796
4.65	4.05	4.15	3.42	1 40	Corn and oats, ...	As certified, ...	5010
3.80	4.06	3.60	3.42	30 00	Corn and oats, ...	As certified, ...	3922
4.13	2-5	5.02	....	1 65	Corn and oats, ...	As certified, ...	4318
4.25	......	3.86	....	32 00	Corn and oats, ...	As certified, ...	3941
3.93	......	2.90	....	32 00	Corn and oats, ...	As certified, ...	4867
4.08	....	4.95	....	30 00	Corn and oats, ...	As certified, ...	3945
4.30	5-7	3.06	8.10	1 57	Corn and oats, ...	As certified, ...	4741
4.18	....	2.72	....	1 70	Corn and oats, ...	As certified, ...	4279
3.70	2-4	6.37	....	1 60	....	Corn and oats, ...	3849
4.75	....	4.35	....	1 40	Corn and oats, ...	As certified, ...	5014
3.68	....	2.85	....	29 00	Corn and oats, ...	As certified, ...	4583
4.05	....	3.34	....	32 00	Corn and oats, ...	As certified, ...	3932
4.13	3-5	3.30	4-8	1 60	Pure corn and oats, ...	As certified, ...	4344
4.25	....	4.32	....	1 60	Corn and oats, ...	As certified, ...	3963
5.08	6.86	6.42	5.20	1 40	....	Corn and oats, ...	4915
2.90	....	3.05	....	1 55	Corn and oats, ...	As certified, ...	3908

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
4284	Corn and Oats Chop, J. A. Goss & Bro., Maitland, Pa.	Lewistown, G. M. White,..	584	12.49	9.56	....
4106	Pure Corn and Oats Chop, Haid & Sweeney, Gallitzin, Pa.	Cresson, H. J. Eberly, ...	406	14.59	8.69	....
4831	Corn and Oats Chop, Haney-Frazier Milling Co., Danville, Pa.	Danville, Haney-Frazier Milling Co.	1131	11.74	8.31	....
4961	Chop, Harmony Cereal Co., Harmony, Pa.	Harmony, Harmony Cereal Co.	1281	10.78	9.88	....
4568	Mixed Chop, Huntingdon Milling Co., Huntingdon, Pa.	Huntingdon, Huntingdon Milling Co.	868	11.43	9.25	7-8
4574	Mixed Chop, Huntingdon Milling Co., Huntingdon, Pa.	Mapleton Depot, A. M. Parker & Son.	874	11.98	8.69	7-8
5027	Corn and Oats Chop, Lanson Bros., Tionesta, Pa.	Tionesta, Lanson Bros.,...	1327	9.95	9.81	....
3965	Chop, Latrobe Wholesale Grocery Co., Latrobe, Pa.	Latrobe, Latrobe Wholesale Grocery Co.	265	14.82	9.00	....
4071	Corn and Oats Chop, Leechburg Flouring Mill, Leechburg, Pa.	Leechburg, Leechburg Flouring Mill.	371	12.19	9.63	....
3809	Mixed Chop, C. P. Matthews & Sons, Inc., Monroeton, Pa.	Towanda, C. P. Matthews & Sons, Inc.	109	*10.86	*9.25	6-10
4879	Chop, Miner-Hillard Milling Co., Miners' Mills, Pa.	Wilkes-Barre, Miner-Hillard Milling Co.	1179	8.91	9.19	8-11
4111	Corn and Oats Chop, Nein & Fisher, Lancaster, Pa.	Lancaster, Nein & Fisher,.	411	10.82	9.50	....
4711	Mixed Chop, Philipsburg Milling, Lighting and Heating Co., Philipsburg, Pa.	Philipsburg, Philipsburg Milling, Lighting and Heating Co.	1011	10.98	9.38	8-43
4791	Corn and Oat Chop, S. F. Phillips & Son, Milton, Pa.	Milton, S. F. Phillips & Son.	1091	9.23	9.75	....
5005	Pure Corn and Oats Chop, The Richards & Evans Co., Cortland, Ohio.	South Sharon, I. & Mike Nathan.	1306	9.05	10.44	8.18
3821	Corn and Oats Chop, H. C. Rollison, Troy, Pa.	Troy, H. C. Rollison, ...	121	14.40	10.31	....
5004	Chop, Sharon Milling Co., Sharon, Pa.	South Sharon, I. & Mike Nathan.	1304	9.51	10.38	....
5000	Pure Corn and Oats Chop, Sharon Milling Co., Sharon, Pa.	Sharon, Sharon Milling Co.,	1300	10.45	10.00	....
4004	Corn and Oats Chop, O. P. Shoupe, Mt. Pleasant, Pa.	Mt. Pleasant, O. P. Shoupe.	304	12.48	9.81	7.10
3934	Corn and Oat Feed, Smith Bros., Bradford, Pa.	Bradford, Smith Bros.,....	234	12.27	10.00	....
4740	Corn and Oats Chop, John W. Smith & Bro., Clearfield, Pa.	Clearfield, John W. Smith & Bro.	1040	10.38	8.81	....
3919	Corn and Oats Chop, J. A. Stoll & Co., Kane, Pa.	Kane, J. A. Stoll & Co.,..	219	15.16	9.31	....
5043	Corn and Oats Chop, Titusville City Mills, Titusville, Pa.	Titusville, Titusville City Mills.	1343	10.40	9.56	....
5187	Corn and Oats Chop, The Toledo Grain and Milling Co., Toledo, Ohio.	Wilmerding, Routh & Co.,.	1487	9.78	9.38	10-12

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*Excluded from average.

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
4.43	....	3.20	....	$1 70	Corn and oats,	As certified,	4284
3.90	....	2.35	....	1 75	Corn and oats,	As certified,	4106
3.48	....	1.93	....	1 50	Corn and oats,	As certified,	4831
4.38	....	3.47	....	1 60	Corn and oats,	As certified,	4981
4.40	5-7	2.85	4-9	30 00	Corn and oats,	As certified,	4568
4.30	5-7	2.57	4-9	1 70	....	Corn and oats,	4374
4.50	....	4.52	....	1 40	Corn and oats,	As certified,	5027
3.10	....	2.94	....	30 00	Corn and oats,	As certified,	3965
4.45	....	3.87	....	1 65	Corn and oats,	As certified,	4071
*4.25	2-6	*5.06	....	*1 40	Corn and oats,	Corn, oats and rye,	3809
3.37	4-6	4.92	5-6	1 57	....	Corn and oats,	4879
5.05	....	4.41	....	1 60	Corn and oats,	As certified,	4111
4.33	4.47	3.57	1.79	1 75	Corn and oats,	As certified,	4711
4.50	....	3.52	....	1 50	Corn and oats,	As certified,	4791
4.65	3.13	4.77	0.10	1 60	Corn and oats chop,	As certified,	5005
2.75	....	5.32	....	32 00	Corn and oats,	As certified,	3821
5.38	....	5.20	....	1 50	....	Corn and oats,	5004
4.70	....	4.27	....	1 50	Corn and oats,	As certified,	5000
4.05	2.05	4.27	6.50	32 00	Corn and oats,	As certified,	4004
3.95	....	5.87	....	32 00	Corn and oats,	As certified,	3934
4.23	....	2.55	....	1.50	Corn and oats,	As certified,	4740
3.75	....	3.00	....	32 00	Corn and oats,	As certified,	3919
4.40	....	4.70	....	25 00	Corn and oats,	As certified,	5043
4.55	4-6	2.41	6-8	1.65	Pure and unadulterated corn and oats.	As certified,	5187

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
3954	Corn and Oats Feed, Warren Mills Co., Warren, Pa.	Warren, Warren Mills Co.,	254	12.09	9.51	....
5154	Corn and Oats Chop, Waynesburg Milling Co., Waynesburg, Pa.	Waynesburg, Waynesburg Milling Co.	1454	9.44	10.44	....
4288	Corn and Oats Chop, Wisehaupt & Frazer, Port Royal, Pa.	Port Royal, Wisehaupt & Frazer.	588	12.26	9.50	....
		Average, ...	....	11.38	9.53	....
	Corn, Oats and Barley Chops.					
5015	No. 1 Chop, Enterprise Milling Co., Oil City, Pa.	Oil City, Enterprise Milling Co.	1315	9.00	11.44	10.41
4119	Mixed Chop, John W. Eshelman, Lancaster, Pa.	Lancaster, John W. Eshelman.	419	10.86	11.13	6.00
4017	Uniontown Roller Mills Chop, Hogsett & Hankins, Uniontown, Pa.	Uniontown, Hogsett & Hankins.	317	14.19	9.44	8.00
3819	Corn Oat and Barley Feed "A," Husted Milling Co., Buffalo, N. Y.	Troy, H. M. Spalding & Son.	119	10.38	10.75	9-11
4950	Corn, Oats and Barley Chop, H. J. Klingler & Co., Butler, Pa.	Butler, H. J. Klingler & Co.	1250	8.60	10.19	....
4005	Corn, Oats and Barley Chop, O. P. Shoupe, Mt. Pleasant, Pa.	Mt. Pleasant, O. P. Shoupe	305	10.73	10.69	8.50
3900	Mixed Chop, E. J. Smith, Emporium, Pa.	Emporium, E. J. Smith, ...	200	14.37	9.50	....
		Average, ...	....	11.16	10.45	....
	Corn, Oats and Rye Chops.					
4854	Chop, Aqueduct Mills, Bloomsburg, Pa.	Catawissa, W. A. McCloughan.	1154	9.04	10.81	9.36
4167	Corn, Oats and Rye Chop, Columbia Milling Co., Columbia, Pa.	Columbia, Columbia Milling Co.	467	11.14	9.56	....
4546	Corn, Oats and Rye Chop, Frank J. Erdman, Allentown, Pa.	Allentown, Frank J. Erdman.	846	10.71	10.81	....
4798	Corn, Oats and Rye Chop, H. L. Follmer, Watsontown, Pa.	Watsontown, H. L. Follmer.	1098	9.56	11.31	....
4215	Corn, Oats, Rye Chop, William Heidlebaugh, York, Pa.	York, A. F. Gross & Son, ..	515	10.10	10.00	....
4194	Corn, Oats and Rye Chop, J. O. Kreidler, York, Pa.	York, F. Z. Stauffer, ...	494	10.02	10.38	....
5007	Corn, Oats and Rye Chop, J. H. Miller, Sharpsville, Pa.	Sharpsville, J. H. Miller, ..	1307	9.50	10.56	....
4338	Chop, J. B. Rich, Woolrich, Pa.	Lock Haven, F. H. Dyer, ..	638	11.09	10.19	....
4942	No. 1 Feed, Scranton Flour and Grain Co., Scranton, Pa.	Scranton, Scranton Flour and Grain Co.	1242	10.07	9.69	....
4213	Corn, Oats and Rye Chop, C. F. Werner, York, Pa.	York, Jacob Eyster, ...	513	11.72	10.63	....
		Average, ...	....	10.29	10.39	....

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
4.00	....	3.72	....	$29 00	Corn and oats, and possibly some rye.	Corn and oats, ...	3954
4.70	....	5.87	....	30 00	Corn and oats, ...	As certified, ...	5154
2.88	....	2.10	....	32 00	Corn and oats, ...	As certified, ...	4288
4.15	....	3.91	....	30 65			
6.60	3.73	5.10	6.98	1 30	Corn, oats and barley,....	As certified, ...	5015
5.90	2.00	5.11	6.00	28 00	Corn, oats and barley,....	As certified, ...	4119
3.95	3.00	3.38	5.00	1 50	Corn, oats and barley,....	As certified, ...	4017
4.00	4-6	5.38	7-10	1 60	Corn, oats, barley and three-fourths of one per cent. salt.	As certified, ...	3819
4.35	....	4.50	....	1 50	Corn, oats and barley,....	As certified, ...	4950
4.03	1.50	4.96	6.50	32 00	Corn, oats and barley,....	As certified, ...	4005
3.15	....	3.10	....	1.60	Corn, oats and a little barley.	As certified, ...	3900
4.57	....	4.50	....	30 00			
2.05	2.98	2.25	7.00	1 75	Corn, oats and rye, ...	As certified, ...	4854
4.15	....	4.41	....	1 75	Corn, oats and rye, ...	As certified, ...	4167
3.20	....	3.32	....	1.75	Pure corn, rye and oats chop.	As certified, ...	4546
3.55	....	3.25	....	1.50	Corn, oats and rye, ...	As certified, ...	4798
4.28	....	4.34	....	1 85	Corn, oats and rye, ...	As certified, ...	4215
3.60	....	3.78	....	1 85	Corn, oats and rye, ...	As certified, ...	4194
4.30	....	3.55	....	1 60	Corn, oats and rye, ...	As certified, ...	5007
3.48	....	3.05	....	1 70	....	Corn, oats and rye,..	4338
2.83	....	4.57	....	1.45	Corn, oats and rye, ...	As certified, ...	4942
3.80	....	4.28	....	1 80	Corn, oats and rye, ...	As certified, ...	4213
3.61	....	3.68	....	34 00			

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
	Chop Feeds.					
4628	Rye and Oats Chop, Altoona Feed Mills, Altoona, Pa.	Altoona, Altoona Feed Mills.	928	10.43	13.31	....
4637	Chop, Altoona Grain and Feed Co., Altoona, Pa.	Altoona, Altoona Grain and Feed Co.	937	7.84	10.31	....
4663	Crescent Corn and Oats Chop, T. M. Biddle, Altoona, Pa.	Altoona, T. M. Biddle,....	963	9.48	10.31	7.59
4599	Mixed Chop, Blackburn Milling Co., Cessna, Pa.	Bedford, William Smith,...	899	10.53	10.88	8.00
4843	Mixed Chop, Bloomsburg Roller Mills, Bloomsburg, Pa.	Bloomsburg Bloomsburg Roller Mills.	1143	9.53	11.31	10.06
4074	Ear Corn Chop, D. H. Boarts, Kittanning, Pa.	Kittanning, D. H. Boarts,.	374	13.36	8.06	....
4075	Buckwheat Chop, D. H. Boarts, Kittanning, Pa.	Kittanning, D. H. Boarts,.	375	13.64	10.06	....
4270	Chop Feed, Buffalo Cereal Co., Buffalo, N. Y.	Kennett Square, W. H. Walker & Co.	570	8.66	7.00	7–8
4655	Cow Chop, E. D. Clark, Altoona, Pa.	Altoona, E. D. Clark, ...	955	9.77	9.38	8–10
4319	Mixed Chop, Dayton Milling Co., Towanda, Pa.	Williamsport, Gohl & King,	619	10.12	8.25	6–10
4669	Bourbon Chop, E. E. Delp Grain Co., Bourbon, Ind.	Altoona R. F. Notley, ...	969	10.04	10.31	8–9
3864	Whole Grain Chop, Elkland Roller Mills, Elkland, Pa.	Elkland, Elkland Roller Mills.	164	10.47	9.19	....
5035	Corn and Oats Feed, Emlenton Milling Co., Ltd., Emlenton, Pa.	Emlenton, Emlenton Milling Co., Ltd.	1335	10.82	10.94	9.00
4545	Mixed Chop, Frank J. Erdman, Allentown, Pa.	Allentown, Frank J. Erdman	845	11.12	11.25	8–12
4345	Corn, Oats & Middlings Chop, Foresman & Kelsey Milling Co., Flemington, Pa.	Flemington, Foresman & Kelsey Milling Co.	645	11.25	10.31	9–12
4697	Pennsylvania Special No. 1 Chop Feed, Globe Elevator Co., Buffalo, N. Y.	Philipsburg, Feed Grain Co.	997	9.77	10.81	8–10
4746	Pennsylvania Special No. 1 Chop Feed, Globe Elevator Co., Buffalo, N. Y.	Wallaceton, E. K. Turner,.	1046	9.05	9.88	8–10
		Average, ...	....	9.11	10.35	....
4548	Mixed Chop, Jacob S. Haines, Allentown, Pa.	Allentown, A. T. Stever Est.	848	10.53	11.63	7–12
4538	Mixed Chop, Anchor Roller Mills, Allentown, Pa.	Allentown, H. F. Gruver,..	838	9.67	12.81	8–10
4563	Choice Mixed Chop, Anchor Roller Mills, Allentown, Pa.	Allentown, John E. Schuon.	863	9.59	12.94	8–10
		Average, ...	....	9.63	12.88	....

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
2.65	....	4.07	....	$2 02	Rye and oats,	As certified,	4628
6.23	....	6.62	....	1.54	Victor Feed from the Quaker Oats Co., hominy feed and low grade flour.	Corn, oats, oat hulls, wheat feed and salt.	4637
4.15	3.00	4.65	17.50	29 00	Corn, oats, wheat middlings, hominy feed and oat feed.	Corn, oats, wheat middlings, hominy feed, oat feed and trace of rye.	4663
4.30	3.00	4.10	12.00	1 60	Corn, oats, barley and wheat middlings.	As certified,	4599
3.95	3.90	3.35	7.00	32 00	Pure grain chop,	Corn, oats and wheat,	4843
3.75	....	4.52	....	1.25	Ear corn,	As certified,	4074
2.83	....	8.47	....	1.45	Buckwheat,	As certified,	4075
3.78	3-4	12.57	6.00	32 00	Corn, hominy feed, oat bran and oat hulls.	Corn, hominy feed, oat bran, oat hulls and salt.	4270
4.30	3.50-4.50	3.72	7-9	30 00	Shelled corn, ear corn, oats, oat middlings, oat shorts and oat hulls.	As certified,	4655
3.45	3-6	7.00	6-12	1.65	Corn and oat bran,	Corn, oat bran, and oat hulls.	4319
4.20	3-4	4.27	6-8	1.65	Corn, oats, oat hulls and barley.	As certified,	4669
4.00	....	6.10	....	29 00	Corn, oats and sometimes buckwheat, barley or rye added.	Corn and oats,	3861
4.45	4.00	4.87	4.00	27 00	Corn, oats and corn bran.	As certified,	5035
4.20	3-5	3.22	3-7	1.60	Corn, rye and rye middlings.	As certified,	4545
4.05	3-5	2.55	4-8	1.60	Corn, oats and middlings,	As certified,	4315
4.70	4-5	4.22	9.00	1 70	Hominy feed, wheat flour, ground shelled and ear corn, oats, oat hulls, and about 5 lbs. salt to the ton.	As certified,	4697
5.28	4-5	6.20	9.00	29 00	Hominy feed, wheat flour, ground shelled and ear corn, oats, oat hulls, and about 5 lbs. salt to the ton.	As certified,	4746
4.06	....	5.21	....	31 50			
3.63	2-6	5.00	3-7	1 65	Corn, ear corn, rye middlings and wheat screenings.	As certified,	4548
6.48	4-6	4.40	3-4	1 60	Corn, rye feed and hominy.	As certified,	4539
6.50	4-6	4.60	3-4	1 80	Corn, rye feed and hominy.	As certified,	4563
6.47	....	4.50	....	1 70			

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
4910	Mixed Chop, Hazleton Mercantile Co., Hazleton, Pa.	Hazleton, Hazleton Mercan-Co.	1210	8.50	10.25	6-8
4911	Rye Mixed Chop, Hazleton Mercantile Co., Hazleton, Pa.	Hazleton, Hazleton Mercan-Co.	1211	8.86	11.56	5-10
4016	Uniontown Roller Mills Chop, Hogsett & Hankins, Uniontown, Pa.	Uniontown, Hogsett & Hankins.	316	11.54	8.25	8.00
4322	Monarch Chop Feed, Husted Milling Co., Buffalo, N. Y.	Williamsport, W. F. Coleman.	622	9.79	9.00	7.50-9
4307	Monarch Chop Feed, Husted Milling Co., Buffalo, N. Y.	Williamsport, F. W. Dawson & Son.	607	9.81	8.88	7.50-9
		Average,	....	9.80	8.94	....
4007	Corn, Oats and Barley Chop, The Imperial Grain and Milling Co., Toledo, Ohio.	Mt. Pleasant, J. H. Brown & Son.	307	8.62	8.56	8.90
4638	Corn, Oats and Barley Chop, The Imperial Grain and Milling Co., Toledo, Ohio.	Altoona, Central Feed Co.,	988	6.47	9.38	8.90
3978	Corn, Oats and Barley Chop, The Imperial Grain and Milling Co., Toledo, Ohio.	Greensburg, McFarland Supply Co.	278	8.99	9.31	8.90
		Average,	....	8.02	9.08	....
4006	Premium Chop, The Imperial Grain and Milling Co., Toledo, Ohio.	Mt. Pleasant, J. H. Brown & Son.	306	10.28	8.69	8.00
5003	Premium C. & O. Chop, The Imperial Grain and Milling Co., Toledo, Ohio.	South Sharon, J. B. Ronx & Co.	1303	7.30	8.19	8.00
4066	Premium Chop, The Imperial Grain and Milling Co., Toledo, Ohio.	Vandergrift, T. J. Rowley,	366	9.15	8.13	8.00
		Average,	....	8.91	8.34	....

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
8.35	2-4	6.45	3-9	$25 00	Hominy, corn and oat feed.	As certified, ...	4910
6.85	2-4	4.97	3-10	29 00	Rye feed, oat feed and hominy.	As certified, ...	4911
4.45	3.00	7.73	5.00	1 45	Corn, oats and oat hulls,	As certified, ...	4016
5.08	3.50-4.50	6.25	7-9	1 50	Corn, oats, oat hulls and three-fourths of 1 per cent. salt.	As certified, ...	4322
3.90	3.50-4.50	5.75	7-9	1 35	Corn, oats, oat hulls and three-fourths of 1 per cent. salt.	As certified, ...	4307
4.47	....	6.00	....	28 50			
3.95	3.70	8.72	9.00	32 00	Shelled and ear corn, oats, barley, wheat flour, oat middlings, oat bran, oat hulls, cottonseed meal and one-fourth of 1 per cent. salt.	As certified, ...	4007
4.05	3.70	10.52	9.00	1 65	Shelled and ear corn, oats, barley, wheat flour, oat middlings, oat bran, oat hulls, cottonseed meal and one-fourth of 1 per cent. salt.	As certified, ...	4638
3.95	3.70	8.92	9.00	29 00	Shelled and ear corn, oats, barley, wheat flour, oat middlings, oat bran, oat hulls, cottonseed meal and one-fourth of 1 per cent. salt.	As certified, ...	3978
3.98	....	9.38	....	31 33			
3.95	3.50	6.38	9.00	30 00	Shelled and ear corn, cottonseed meal, white hominy meal, oat middlings, oat bran, oat hulls and one-fourth of 1 per cent. salt.	As certified, ...	4006
3.50	3.50	9.45	13.00	1 50	Shelled and ear corn, cottonseed meal, white hominy meal, oat middlings, oat bran, oat hulls and one-fourth of 1 per cent. salt.	As certified, ...	5008
3.75	3.50	7.39	9.00	1 50	Shelled and ear corn, cotconseed meal, white hominy meal, oat middlings, oat bran, oat hulls and one-fourth of 1 per cent. salt.	As certified, ...	4068
3.73	....	7.74	....	30 00			

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
4556	Mixed Chop, George A. Keck & Co., Allentown, Pa.	Allentown, Edwin S. Koch,	856	10.28	11.44	7-12
5197	Pure Eagle Barley Feed, J. B. A. Kern & Sons, Milwaukee, Wis.	Braddock, A. Hecht,	1497	9.02	14.06	13.75
4672	Cow Chop, Klepser Bros., Martinsburg, Pa.	Martinsburg, Klepser Bros.,	972	10.15	10.25	7.00
4648	Meal Chpp, Klepser Bros., Martinsburg, Pa.	Altoona, Klepser Bros.,	948	9.82	9.00	7.00
4647	Cow Chop, Klepser Bros., Martinsburg, Pa.	Altoona, Klepser Bros.,	947	9.82	9.50	7.00
4557	Mixed Chop, M. M. Laudenslager, Emaus, Pa.	Allentown, Edwin S. Koch,	857	10.03	10.81	7-12
4531	Mixed Chop, M. M. Laudenslager, Emaus, Pa.	Allentown, Geo. B. Shelly Est.	834	9.20	11.19	7-12
4547	Mixed Chop, M. M. Laudenslager, Emaus, Pa.	Allentown, R. A. Wagner,	847	9.49	10.09	7-12
		Average,		9.57	10.90	
4775	Red Star Rye Chop, Mauser Mill Co., Laureys, Pa.	Mt. Carmel, Schneider Bros.	1075	11.60	12.69	
4619	Rye and Oats Chop, Martin & Co., Altoona, Pa.	Altoona, Martin & Co.,	919	10.05	11.44	
3832	Barley Chop, John H. Miller's Sons, Tyrone, Pa.	Everett, J. & C. Howard,	132	8.84	14.81	
4923	No. 1 Chop, Miner-Hillard Milling Co., Scranton, Pa.	Scranton, Miner-Hillard Milling Co.	1223	8.79	10.81	
4917	Mixed Chop, Miner-Hillard Milling Co., Scranton, Pa.	Scranton, Miner-Hillard Milling Co.	1217	8.77	10.13	8-11
4947	Mixed Grain, A. Nowak & Son, Buffalo, N. Y.	Nanticoke, Frank Stooks,	1247	10.40	10.50	
4317	Rye and Oats Chop, The Ring Milling Co., Muncy, Pa.	Williamsport, Gohl & King,	617	8.84	14.32	9-10
4898	A. Chop, Robbins Milling Co., Wilkes-Barre, Pa.	Wilkes-Barre, Kirkendall Son Co.	1198	7.87	10.88	9-12
4890	A. Chop, Robbins Milling Co., Wilkes-Barre, Pa.	Wilkes-Barre, Robbins Milling Co.	1190	7.85	10.75	9-12
		Average,		7.86	10.82	
4889	B. Chop, Robbins Milling Co., Wilkes-Barre, Pa.	Wilkes-Barre, Robbins Milling Co.	1189	8.00	10.19	9-11
4537	Mixed Chop, Romig Bros., Wescosville, Pa.	Allentown, H. F. Gruver,	837	10.87	11.13	6-10
4560	Mixed Chop, Romig Bros., Wescosville, Pa.	Allentown, Edwin S. Koch,	860	11.11	11.31	6-10
		Average,		10.99	11.22	
4551	Mixed Chop, H. N. Schleifer, Allentown, Pa.	Allentown, H. N. Schleifer,	851	8.93	11.00	7-9
4003	No. 2 Chop, O. P. Shoupe, Mt. Pleasant, Pa.	Mt. Pleasant, O. P. Shoupe,	303	12.23	10.19	10.50

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.					
Found.	Guaranteed.	Found.	Guaranteed.	Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Per ct.	Per ct.	Per ct.	Per ct.				
5.30	2-6	4.20	3-7	$1 65	Corn, rye middlings, hominy feed, wheat screenings, and S. S. feed.	Corn, rye, middlings, hominy feed, wheat, oat products and a small amount of cottonseed meal.	4556
4.20	4.00	9.00	9.04	1.60	Pure barley feed,	As certified,	5197
5.45	3.00	4.47	7 9	1 60	Corn and barley feed,	As certified,	4672
5.10	3.00	2.67	7-8	31 50	Corn and hominy,	As certified,	4648
4.40	3.00	2.65	7-9	31 00	Corn, barley feed and hominy meal.	As certified,	4647
5.89	2 6	3.70	3-7	1.65	Corn, ear corn, rye middlings, hominy feed and oat feed.	As certified,	4557
6.30	2-6	4.35	3-7	32 00	Corn, ear corn, rye middlings, hominy feed and oat feed.	As certified,	4534
5.45	2 6	4.75	3-7	1 65	Corn, ear corn, rye middlings, hominy feed and oat feed.	As certified,	4547
5.85		4.26		32 33			
2.00		1.67		1.90	Rye chop,	As certified,	4775
2.70		3.80		1.90	Rye and oats,	As certified,	4619
4.20		10.55				Barley and trace of oats.	3832
6.95		5.90		29 00	Hominy feed and oats,	As certified,	4923
8.03	4-6	7.22	5-6	27 00	Corn, wheat middlings and oat bran.	As certified,	4917
3.80		2.07		2 17		Corn, oats, wheat, barley and grit.	4947
3.38	1-3	4.50	1-4	1 85	Rye and oats,	As certified,	4317
7.10	5-7	7.35	4-6	1 50	Corn, hominy, oats, barley, "oat feed" and rye middlings.	As certified,	4898
6.80	5-7	7.95	4-6	30 00	Corn, hominy, oats, barley, "oat feed" and rye middlings.	As certified,	4890
6.95		7.65		30 00			
7.03	6-8	6.77	4-6	28 00	Corn, hominy and oat feed.	As certified,	4889
4.33	3-6	2.55	2-3	1 60	Corn, rye middlings and red middlings.	As certified,	4537
4.33	3-6	3.17	2-3	1 65	Corn, rye middlings and red middlings.	As certified,	4560
4.33		2.86		32 70			
6.90	4-6	4.97	4-8	1 50	Corn, rye feed, screenings and hominy.	As certified,	4551
3.68	3.50	10.72	12.50	28 00	Corn, brewers' dried grains and cob meal.	As certified,	4003

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
4026	C. O. & B. Chop Feed, The Toledo Grain and Milling Co., Toledo, Ohio.	Uniontown, Harry Hagan,	326	9.53	8.25	7-9
5098	C. O. & B. Chop Feed, The Toledo Grain and Milling Co., Toledo, Ohio.	Tionesta, G. W. Robinson & Son.	1328	8.87	8.50	7-9
4744	C. O. & B. Chop Feed, The Toledo Grain and Milling Co., Toledo, Ohio.	Clearfield, Ross & Woods,-	1044	9.31	8.50	7-9
		Average,		9.23	8.42	
4735	C. O. B. K. Chop Feed, The Toledo Grain and Milling Co., Toledo, Ohio.	Du Bois, S. A. Eisenman,-	1035	8.56	8.44	7-9
3956	C. O. B. K. Chop Feed, The Toledo Grain and Milling Co., Toledo, Ohio.	Ridgway, Smith Bros. Co.,	256	11.77	7.94	7-9
3702	C. O. B. K. Chop Feed, The Toledo Grain and Milling Co., Toledo, Ohio.	Blairsville, Smith & McKelvey.	2	11.20	8.44	7-9
4296	C. O. B. K. Chop Feed, The Toledo Grain and Milling Co., Toledo, Ohio.	Punxsutawney, G. A. Weiss & Bro.	596	8.43	8.56	7-9
		Average,		9.98	8.35	
4350	Keystone Chop Feed, The Toledo Grain and Milling Co., Toledo, Ohio.	Renovo, M. Dwyer,	650	9.33	8.31	7-9
3738	Keystone Chop Feed, The Toledo Grain and Milling Co., Toledo, Ohio.	Barnesboro, Kerr & Williams.	38	9.95	8.44	7-9
4964	Keystone Chop Feed, The Toledo Grain and Milling Co., Toledo, Ohio.	Butler, B. F. Shannon & Co.	1264	8.34	8.38	7-9
4295	Keystone Chop Feed, The Toledo Grain and Milling Co., Toledo, Ohio.	Punxsutawney, G. A. Weiss & Bro.	595	8.84	8.38	7-9
		Average,		9.11	8.38	
4351	M. D. Chop Feed, The Toledo Grain and Milling Co., Toledo, Ohio.	Renovo, M. Dwyer,	651	8.46	7.75	7-9
4968	M. D. Chop Feed, The Toledo Grain and Milling Co., Toledo, Ohio.	New Castle, Fisher & Mengle.	1268	9.07	8.13	7-9

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
4.18	3.50-4.50	5.42	6-8	$1 60	White shelled corn, ear corn, barley, oats, oat middlings, oat shorts and oat hulls.	As certified, ...	4026
4.73	3.50-4.50	7.15	6-8	1 50	White shelled corn, ear corn, barley, oats, oat middlings, oat shorts and oat hulls.	As certified, ...	5028
5.38	3.50-4.50	6.55	6-8	1 66	White shelled corn, ear corn, barley, oats, oat middlings, oat shorts and oat hulls.	As certified, ...	4744
4.76	....	6.37	....	31 67			
5.60	3.50-4.50	8.15	6-8	1 56	White shelled corn, ear corn, barley, wheat flour, oats, oat middlings, oat shorts and oat hulls.	As certified, ...	4735
4.00	3.50-4.50	6.08	6-8	1 75	White shelled corn, ear corn, barley, wheat flour, oats, oat middlings, oat shorts and oat hulls.	As certified, ...	3956
5.20	3.50-4.50	4.70	6-8	33 00	White shelled corn, ear corn, barley, wheat flour, oats, oat middlings, oat shorts and oat hulls.	White shelled corn, ear corn, barley, oats, oat middlings, oat shorts and oat hulls.	3702
4.88	3.50-4.50	7.00	6-8	1 50	White shelled corn, ear corn, barley, wheat flour, oats, oat middlings, oat shorts and oat hulls.	As certified, ...	4296
4.92	....	6.48	....	32 30			
4.60	3.50-4.50	5.25	6-8	1 65	White shelled corn, ear corn, barley, wheat flour, oats, oat middlings, oat shorts and oat hulls.	As certified, ...	4350
4.50	3.50-4.50	6.10	6-8	2 00	White shelled corn, ear corn, barley, wheat flour, oats, oat middlings, oat shorts and oat hulls.	As certified, ...	3738
5.38	3.50-4.50	6.90	6-8	30 00	White shelled corn, ear corn, barley, wheat flour, oats, oat middlings, oat shorts and oat hulls.	As certified, ...	4964
4.88	3.50-4.50	7.60	6-8	1 56	White shelled corn, ear corn, barley, wheat flour, oats, oat middlings, oat shorts and oat hulls.	As certified, ...	4295
4.84	....	6.46	....	34 00			
4.83	3.50-4.50	11.12	7-9	1 50	White or yellow shelled corn, ear corn, oats, oat middlings, oat shorts and oat hulls.	As certified, ...	4351
4.18	3.50-4.50	5.96	7-9	1 35	White or yellow shelled corn, ear corn, oats, oat middlings, oat shorts and oat hulls.	As certified, ...	4968

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
5171	M. D. Chop Feed, The Toledo Grain and Milling Co., Toledo, Ohio.	Carnegie, C. A. Foster,	1474	10.70	8.31	7-9
4025	M. D. Chop Feed, The Toledo Grain and Milling Co., Toledo, Ohio.	Uniontown, Harry Hagan,	325	9.44	8.88	7-9
4091	M. D. Chop Feed, The Toledo Grain and Milling Co., Toledo, Ohio.	New Kensington, J. A. Hawk.	391	9.97	7.75	7-9
5151	M. D. Chop Feed, The Toledo Grain and Milling Co., Toledo, Ohio.	Waynesburg, Bert Hughes,	1451	9.82	7.88	7-9
5143	M. D. Chop Feed, The Toledo Grain and Milling Co., Toledo, Ohio.	Washington, G. W. McBrier.	1443	9.22	8.19	7-9
4300	M. D. Chop Feed, The Toledo Grain and Milling Co., Toledo, Ohio.	Reynoldsville, Robinson & Mundorf.	600	9.33	8.19	8-10
5185	M. D. Chop Feed, The Toledo Grain and Milling Co., Toledo, Ohio.	Wilmerding, Routh & Co.,	1485	9.32	7.88	7-9
3703	M. D. Chop Feed, The Toledo Grain and Milling Co., Toledo, Ohio.	Blairsville, Smith & McKelvey.	3	12.12	8.50	8-10
4715	M. D. Chop Feed, The Toledo Grain and Milling Co., Toledo, Ohio.	Munson Station, Jacob Smutzinger.	1015	8.04	8.38	7-9
		Average,		9.59	8.17	....
4748	Mixed Chop, E. K. Turner, Wallaceton, Pa.	Wallaceton, E. K. Turner,	1048	9.10	14.06	6-8
4691	Corn, Oats, Rye and Hominy Feed, Tyrone Milling Co., Tyrone, Pa.	Tyrone, Tyrone Milling Co.	991	9.50	10.56	8.50
4729	Corn, Oats and Barley Chop, Victor Mills, Springville, N. Y.	Du Bois, A. T. Sprankle,	1029	9.96	9.25	7-10
4356	Standard Chop, C. Y. Wagner, Bellefonte, Pa.	Bellefonte, C. Y. Wagner,	656	11.68	12.06	10-12
4490	Mixed Chop, Geo. W. Wertz, Wernersville, Pa.	Reading, George W. Wertz,	790	9.36	11.00	11.00
4899	Chop, Wilkes-Barre Milling Co., Wilkes-Barre, Pa.	Wilkes-Barre, Wilkes-Barre Milling Co.	1199	8.10	8.69	7-10
4814	Pure Grain Chop, J. F. Youngman, Selinsgrove, Pa.	Selinsgrove, J. F. Youngman.	1114	10.70	11.31	....
4514	Chop, A. Yocom's Sons & Co., Reading, Pa.	Reading, A. Yocom's Sons & Co.	814	10.38	11.25	11.88
	PROPRIETARY POULTRY FOODS.					
4665	Eclipse Poultry Food, T. M. Biddle, Altoona, Pa.	Altoona, T. M. Biddle,	965	9.78	11.13	3.00

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
4.35	3.50-4.50	6.04	7-9	$23 00	White or yellow shelled corn, ear corn, oats, oat middlings, oat shorts and oat hulls.	As certified, ...	5174
5.70	3.50-4.50	6.90	7-9	1 50	Yellow shelled corn, ear corn, oats, oat middlings, oat shorts and oat hulls.	As certified, ...	4025
4.40	3.50-4.50	7.46	7-9	1 40	Yellow shelled corn, ear corn, oats, oat middlings, oat shorts and oat hulls.	As certified, ...	4191
3.90	3.50-4.50	6.50	7-9	1 65	White or yellow shelled corn, ear corn, oats, oat middlings, oat shorts and oat hulls.	As certified, ...	5151
3.75	3.50-4.50	6.80	7-9	26 00	White or yellow shelled corn, ear corn, oats, oat middlings, oat shorts and oat hulls.	As certified, ...	5143
4.48	3.50-4.50	7.07	7-9	1 50	Yellow shelled corn, ear corn, oats, oat middlings, oat shorts and oat hulls.	As certified, ...	4870
3.60	3.50-4.50	6.87	7-9	1 50	White or yellow shelled corn, ear corn, oats, oat middlings, oat shorts and oat hulls.	As certified, ...	5185
4.38	3.50-4.50	4.70	7-9	30 00	Yellow shelled corn, ear corn, oats, oat middlings, oat shorts and oat hulls.	As certified, ...	3703
4.55	3.50-4.50	9.80	7-9	27 00	White or yellow shelled corn, ear corn, oats, oat middlings, oat shorts and oat hulls.	As certified, ...	4715
4.33	....	7.20	....	28 55			
5.25	1-2	5.80	2-10	30 00	Corn, oats, middlings, lograde and Pa. special.	Corn, oats, wheat feed and salt.	4748
4.78	3.50	3.35	3.00	30 00	Corn, oats, rye and hominy feed.	As certified, ...	4691
5.40	4-6	7.45	7-10	1 45	Corn, barley, hominy, oat hulls, and 6 ounces salt in 100 lbs.	As certified, ...	4729
3.93	3-4	4.20	5-7	31 00	Corn, barley, oats and middlings.	As certified, ...	4356
3.15	3.00	4.00	4.50	1 80	Corn, oats, rye and middlings.	As certified, ...	4490
4.78	3-6	8.90	3-6	1 40	Corn, wheat middlings and "oat feed."	As certified, ...	4899
3.05	....	3.80	....	30 00	Made of whole grains from toll, corn, oats, rye, wheat and possibly some buckwheat.	As certified, ...	4814
4.21	4.75	3.57	4.52	30 00	Corn, oats, rye and middlings.	As certified, ...	4514
3.10	2.00	2.87	9.00	1 80	Wheat, cracked corn, Kaffir corn, buckwheat, oats, barley, grit and shell.	As certified, ...	4665

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
4666	Eclipse Poultry Food, T. M. Biddle, Altoona, Pa.	Altoona, T. M. Biddle,....	966	11.71	10.25	3.00
		Average, ...	....	10.72	10.64	......
4760	Blended Hen Food, Blank & Gottshall, Sunbury, Pa.	Sunbury, Blank & Gottshall.	1060	11.25	10.68	8-10
4861	Blended Hen Food, Blank & Gottshall, Sunbury, Pa.	Marysville, H. E. Keel & Co.	1161	10.45	10.56	8-10
4572	Blended Hen Food, Blank & Gottshall, Sunbury, Pa.	Huntingdon, Stouffer & Brenneman.	872	11.91	11.06	8-10.5
4550	Blended Hen Food, Blank & Gottshall, Sunbury, Pa.	Allentown, A. F. Stover Est.	850	11.21	10.94	8-10.5
		Average, ...	....	11.20	10.80	....
4761	Chick Food Invigorator, Blank & Gottshall, Sunbury, Pa.	Sunbury, Blank & Gottshall.	10.61	10.33	10.00	8-10.5
4759	Mash Food, Blank & Gottshall, Sunbury, Pa.	Sunbury, Blank & Gottshall.	1059	7.20	12.44	11.88
4762	Pigeon Food, Blank & Gottshall, Sunbury, Pa.	Sunbury, Blank & Gottshall.	1062	10.60	12.44	10-12.75
4103	Blatchford's Poultry Meats, Blatchford's Animal Food Works, Waukegan, Ill.	Monaca, Allen Davidson,...	403	7.79	34.13	33.55
3924	Bourbon Scratch Feed, Bourbon Mills, Bourbon, Ind.	Johnsonburg, Cash Wholesale Co.	224	9.72	8.69	....
3983	Chickseat, Champion Mfg. Co., Philadelphia, Pa.	Greensburg, W. N. Davis,..	283	9.67	12.69	12.00

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
3.15	2.00	2.07	9.00	$2 00	Cracked wheat, cracked corn, cracked Kaffir corn and shells.	Corn, wheat, kaffir corn, oyster shells and small amount of weed seeds.	4666
3.13	....	2.47	....	1 90			
3.13	2.25-3	3.15	2.25-3	1 90	Cracked corn, wheat, Kaffir corn, buckwheat, barley, spelts, screenings, cockle, flax seed, hen-e-ta grits and charcoal.	As certified, ...	4760
3.60	2.25-3	3.50	2.25-3	2 25	Cracked corn, wheat, Kaffir corn, buckwheat, barley, shells, screenings. cockle, flax seed, hen-e-ta bone grits and charcoal.	As certified, ...	4861
3.45	2.25-3	3.45	2.25-3	2 25	Cracked corn, wheat, Kaffir corn, buckwheat, barley, spelts, screenings, cockle, flaxseed, hen-e-ta grits, and charcoal.	As certified, ...	4572
3.60	2.25-3	2.65	2.25-3	2 25	Cracked corn, wheat, Kaffir corn, buckwheat, barley, spelts, screenings, cockle, flaxseed, hen-e-ta grits, and charcoal.	As certified, ...	4550
3.45	....	3.18	....	2 16			
2.85	2.25-3	2.45	2.50-3.25	2 00	Cracked corn, cracked wheat, millet, hen-e-ta grit, cracked peas, Kaffir corn, milo maize, charcoal, flax seed and cockle.	As certified, ...	4761
3.45	2.62	4.32	3.81	2 00	Corn meal, gluten meal. wheat middlings, wheat bran, pea meal and hen-e-ta bone grit.	As certified, ...	4759
4.68	3-4.25	4.00	3.50-5.25	2 35	Cracked corn, wheat, buckwheat, Kaffir corn, peas and hempseed.	As certified, ...	4762
9.88	10.02	4.77	....	8 33	Pure beef meal, oyster shell, iron, sunflower seeds, albuminous compounds, ginger, red pepper and oil.	Beef meal, oyster shell, iron, sunflower seed, albuminous compounds, flaxseed, ginger, red pepper and cottonseed meal.	4103
2.93	....	2.11	....	40 00	....	Corn. oats, barley, Kaffir corn, wheat, buckwheat, grit and oyster shell.	3924
3.90	2.00	1.26	2.00	8 33	Dried bone meal, dried beef and bone, baked and kiln dried rolled wheat, calcite, cracked wheat, hominy, sulphur, foenugreek and ginger.	As certified, ...	3983

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
4855	Chickseat, Champion Mfg. Co., Philadelphia, Pa.	Catawissa, W. A. McCloughan.	1155	9.09	13.44	12.00
		Average, ...	....	9.38	13.07	....
5108	O. M. Co. Scratch Feed, Chester Milling Co., Chester, Pa.	Chester, Chester Milling Co.	1403	10.72	9.00	10.25
4659	Superior Hen Food, E. D. Clark, Altoona, Pa.	Altoona, E. D. Clark, ...	959	9.97	10.00	8.00
4660	Superior Chick Food, E. D. Clark, Altoona, Pa.	Altoona, E. D. Clark, ...	960	8.78	8.56	8.00
4165	Chick Feed, Columbia Milling Co., Columbia, Pa.	Columbia, Columbia Milling Co.	465	11.67	11.06	9.00
4166	Hen Feed, Columbia Milling Co., Columbia, Pa.	Columbia, Columbia Milling Co.	466	11.68	11.75	9.00
4892	Poultry Grains, Dayton Milling Co., Towanda,Pa.	Wilkes-Barre, Kirkendall Son Co.	1192	9.05	10.94	8-12
5186	Globe Scratch Feed, The Albert Dickinson Co., Chicago, Ill.	Wilmerding, Routh & Co.,-	1486	10.25	11.63	10.00
4460	Globe Scratch Feed, The Albert Dickinson Co., Chicago, Ill.	Lebanon, A. M. Weltmer's Sons.	760	10.08	12.38	10.00
5166	White Cross Scratch Feed, The Albert Dickinson Co., Chicago, Ill.	Canonsburg, Dunlap Bros.,	1466	11.00	11.94	10.00
		Average, ...	....	10.42	11.98	....
4866	Scratch Feed, Duncannon Flouring Mill Co., Duncannon, Pa.	Duncannon, Duncannon Flouring Mill Co.	1166	11.77	10.06	....
4049	Eaton's Climax Grain Mixture, R. D. Eaton Grain and Feed Co., Norwich, N. Y.	Monessen, J. H. Farquhar,	349	12.16	11.50	11-12
4862	Eaton's Climax Frain Mixture, R. D. Eaton Grain and Feed Co., Norwich, N. Y.	Marysville, P. M. Skivington.	1162	10.36	11.88	11-12
		Average, ...	....	11.26	11.69	....
4051	Eaton's Perfection Mash Mixture, R. D. Eaton Grain and Feed, Co., Norwich, N. Y.	Pittsburg, The I. W. Scott Co.	351	7.71	20.38	20.00

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
4.34	2.00	1.90	2.00	$8 33	Dried bone meal, dried beef and bone, baked and kiln dried rolled wheat, calcite, cracked wheat, hominy, sulphur, foenugreek and ginger.	As certified, ...	4855
4.12	....	1.58	....	8 33			
3.23	4.90	3.82	5.85	2 00	Cracked corn, sunflower, Kaffir corn, buckwheat, barley, oats, wheat, grit and charcoal.	Cracked corn, sunflower seed, Kaffir corn, buckwheat, oats, wheat, grit and charcoal.	5103
3.65	2.00	2.47	15.00	1 90	Cracked corn, buckwheat, Kaffir corn, rye, oats, wheat, sunflower seed, grit and oyster shell.	As certified, ...	4659
3.25	2.00	1.97	15.00	1 90	Cracked corn, Kaffir corn, millet, cracked wheat, grit and oyster shell.	As certified, ...	4660
3.90	3.00	2.92	5.00	2 25	Cracked corn, wheat, screenings, oats, millet, Kaffir corn and rice.	As certified, ...	4165
3.60	3.00	3.90	5.00	2 25	Corn, wheat, oats, barley, buckwheat, and Kaffir corn.	As certified, ...	4166
4.53	3-4	4.80	....	2 00	....	Corn, oats, wheat, barley, Kaffir corn, buckwheat, flaxseed and sunflower seed.	4892
3.30	2.50	3.08	5.00	2 10	Corn, wheat, barley, oats, Kaffir corn, buckwheat, oil cake and sunflower.	As certified, ...	5186
3.38	2.50	3.42	5.00	2 00	Corn, wheat, barley, oats, Kaffir corn, buckwheat, sunflower, oil cake and no grit.	As certified, ...	4460
3.30	2.50	2.44	5.00	2 00	Corn, wheat, barley, oats, Kaffir corn, sunflower and no grit.	As certified, ...	5166
3.83	....	2.98	.....	2 03			
4.53	....	3.97	.....	1 90	Wheat, corn, Kaffir corn, millet, buckwheat and sunflower seeds.	As certified, ...	4866
3.40	2-3	2.92	.....	2 35	Pure grains only, ...	Corn, oats, barley, wheat, buckwheat, Kaffir corn, peas and sunflower seeds.	4049
3.78	2-3	3.02	.....	2 50	Pure grains only, ...	Corn, oats, barley, wheat, buckwheat, milo maize, Kaffir corn, peas and sunflower seed.	4862
3.59	....	2.97	.....	2 43			
5.08	4.00	10.08	.....	2 25	....	Corn, oats, wheat, buckwheat, alfalfa, pea meal, linseed oil meal, wheat bran, meat, bone and charcoal.	40[illegible]

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein. Found.	Crude Protein. Guaranteed.
				Per ct.	Per ct.	Per ct.
4188	Excelsior Pigeon Feed, Jonas F. Eby & Son, Lancaster, Pa.	Lititz, Elmer Eby, ...	488	12.16	12.12	3-9
4170	Laymor Hen Feed, Jonas F. Eby & Son, Lancaster, Pa.	Elizabethtown, E. H. Lehman.	470	11.28	12.25	8-9
4171	Laymor Hen Feed, Jonas F. Eby & Son, Lancaster, Pa.	Elizabethtown, E. H. Lehman.	471	11.94	11.19	8-9
		Average, ...	....	11.61	11.72	....
5180	Red Comb Meat Mash, Edwards & Loomis Co., Chicago, Ill.	Carnegie, J. H. Burgan & Son.	1480	9.95	14.44	15.60
5181	Red Comb Poultry Feed, Edward & Loomis Co., Chicago, Ill.	Carnegie, J. H. Burgan & Son.	1481	10.69	11.00	10.00
4606	Red Comb Poultry Feed, Edwards & Loomis Co., Chicago, Ill.	Wilkinsburg, Johnston & Smith.	906	10.21	11.00	10.00
5155	Red Comb Poultry Feed, Edwards & Loomis Co., Chicago, Ill.	Washington, Russell Bros.,	1455	10.67	10.56	10.00
5156	Red Comb Poultry Feed, Edwards & Loomis Co., Chicago, Ill.	Washington, Russell Bros.,	1456	12.12	10.75	10.00
4451	Red Comb Poultry Feed, Edwards & Loomis Co., Chicago, Ill.	Harrisburg, J. H. Sheesley,	751	12.08	11.75	10.00
		Average, ...	....	11.15	11.01	....
4452	Red Comb Pigeon Feed, Edwards & Loomis Co., Chicago, Ill.	Harrisburg, J. H. Sheesley,	752	10.91	11.25	12.50

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
4.68	2-6	2.97	4-5	$2 30	Cracked corn, buckwheat, wheat, Kaffir corn, barley, flaxseed, millet, peas, hulled oats and 2 per cent. grit.	As certified, ...	4138
3.50	2-3	2.90	7-8	1 90	Kaffir corn, sunflower seed, buckwheat, flaxseed, wheat, poultry bone, wheat screenings, millet, barley, and cracked corn.	As certified, ...	4170
3.40	2-3	2.68	3-4	1 85	Sunflower seed, poultry bone, buckwheat, cracked corn, barley, Kaffir corn, wheat, flaxseed, wheat screenings, millet, 5 per cent. grit and shell.	As certified, ...	4171
3.45	....	2.79	....	1 88			
5.00	4.00	5.24	8.00	2 25	Oat meal, oil meal, cornmeal, beef scraps, wheat bran, wheat middlings, alfalfa meal, not over 5 per cent. shell and 1 per cent. charcoal.	As certified, ...	5180
3.45	2.50	3.17	5.00	2 15	Wheat, cracked corn, Kaffir corn, barley, oats, sunflower seed, buckwheat, not over 3 per cent. grit, 3 per cent. shell, and 1 per cent. charcoal.	As certified, ...	5181
3.55	2.50	3.30	5.00	2 15	Wheat, cracked corn, Kaffir corn, barley, oats, sunflower seed, buckwheat, not over 3 per cent. grit, 3 per cent. shell, and 1 per cent. charcoal.	As certified, ...	4606
3.35	2.50	2.87	5.00	2 05	Wheat, cracked corn, Kaffir corn, barley, oats, sunflower seed, buckwheat, not over 3 per cent. grit, 3 per cent. shell, and 1 per cent. charcoal.	As certified, ...	5155
3.13	2.50	2.57	5.00	2 10	Wheat, cracked corn, Kaffir corn, barley, oats, sunflower seed, buckwheat and not over 1 per cent. charcoal.	Wheat, cracked corn, Kaffir corn, barley, oats, sunflower seed, buckwheat, grit and charcoal.	5156
3.73	2.50	3.92	5.00	2 25	Wheat, cracked corn, Kaffir corn, barley, oats, sunflower seed, buckwheat, and not over 1 per cent. charcoal.	Wheat, cracked corn, Kaffir corn, barley, oats, sunflower seed, buckwheat, charcoal, and small amount of weed seeds.	4451
3.44	....	3.16	....	2 14			
3.04	4.00	3.02	4.00	2 25	Corn, wheat, Kaffir corn, millet, hemp, peas, buckwheat, charcoal and grit.	As certified, ...	4452

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
3783	"Neverfail" Egg Producer-Blended Chicken Feed, Empire Grain and Elevator Co., Binghampton, N. Y.	Susquehanna, A. L. Langford.	85	12.01	10.94	8.75
4121	Chick Feed, John W. Eshelman, Lancaster, Pa.	Lancaster, John W. Eshelman.	421	13.08	8.94	8–9
4122	Hen Feed, John W. Eshelman, Lancaster, Pa.	Lancaster, John W. Eshelman.	422	12.35	10.88	7–8
4120	Pigeon Feed, John W. Eshelman, Lancaster, Pa.	Lancaster, John W. Eshleman.	420	10,59	10.63	8–9
3848	Globe Poultry Food, Globe Elevator Co., Buffalo, N. Y.	Wellsboro, Max Bernkopf & Bro.	148	9.70	17.19	15–16
4236	Sterling Chick Feed, The Great Western Cereal Co., Chicago, Ill.	Coatesville, J. T. Gay & Son.	536	13.14	10.31	10.00
5105	Steling Scratch Feed, The Great Western Cereal Co., Chicago, Ill.	Chester, T. F. McCall, ...	1405	11.35	11.00	10.00
4516	Sterling Scratch Feed, The Great Western Cereal Co., Chicago, Ill.	Reading, Strunk & Moyer,..	816	11.41	10.63	10.00
4709	Sterling Scratch Feed, The Great Western Cereal Co., Chicago, Ill.	Philipsburg, Wolf's Mill,...	1009	11.82	11.00	10.00
		Average, ...	....	11.52	10.88	....
4309	Competition Scratch Feed, Husted Milling Co., Buffalo, N. Y.	Williamsport, F. W. Dawson & Son.	609	10.95	10.88	....
4197	Husted Poultry Feed, Husted Milling Co., Buffalo, N. Y.	York, F. Z. Stauffer, ...	497	9.33	15.13	12–14
4652	Poultry Feed, Klepser Bros., Martinsburg, Pa.	Altoona, Klepser Bros., ...	952	11.24	10.50	7.00
4957	A. No. 1 Poultry Grains, H. J. Klingler & Co., Butler, Pa.	Butler, H. J. Klingler & Co.	1257	10.50	10.38	....
4543	Ideal Chick and Hen Feed, H. B. Kratz & Co., Schwenksville, Pa.	Allentown, Frank J. Erdman.	843	10.92	10.06	8–10

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
3.55	3.75	3.28	4.25	$1 90	Wheat, corn, barley, oats, Kaffir corn, buckwheat and milo maize.	As certified, ...	3783
3.10	2-3	2.22	2-3	36 00	Hulled oats, millet, cracked corn, wheat, Kaffir corn, wheat, screenings, flaxseed, rice, 5 per cent. grit and shells.	Hulled oats, millet, cracked corn, wheat, Kaffir corn, wheat screenings, flaxseed, rice, grit, oyster shell and small amount of weed seeds.	4121
3.80	2-3	2.81	7-8	36 00	Cracked corn, buckwheat, wheat screenings, Kaffir corn, wheat, barley, sunflower, bone, flaxseed, millet and no grit or shell.	As certified, ...	4122
3.10	2-3	2.58	5-6	40 00	Flaxseed, German millet, peas, grit, bone, hulled oats, buckwheat, cracked corn, wheat, Kaffir corn and barley.	As certified, ...	4120
5.05	4-6	7.34	8-9	1 65	Red dog flour, bran, corn meal, middlings, oil meal, charcoal, beef scraps and peanut meal.	As certified, ...	3848
3.05	3.00	1.90	4.00	2 35	Cracked corn, oat groats, millet, unground seeds and grains.	Cracked corn, oat groats, millet, Kaffir corn and wheat.	4236
3.50	3.00	2.62	4.00	2 00	Cracked corn, wheat, barley, Kaffir corn, oats and sunflower seeds.	Cracked corn, wheat oats, barley, Kaffir corn, millet, buckwheat, sunflower seeds, and trace of weed seeds.	5105
4.10	3.00	2.82	4.00	2 00	Cracked corn, wheat, barley, Kaffir corn, oats and sunflower seeds.	Cracked corn, wheat, barley, Kaffir corn, oats, sunflower seed, buckwheat and a small amount of weed seeds.	4516
3.43	3.00	3.15	4.00	2 25	Cracked corn, wheat, barley, Kaffir corn, oats and sunflower seeds.	Cracked corn, wheat, barley, Kaffir corn, oats, sunflower seeds and weed seeds.	4709
3.08	....	2.86	....	2 08			
3.50	....	3.05	....	2 00	....	Corn, oats, barley, wheat, buckwheat and Kaffir corn.	4309
5.45	4-5	7.65	6-9	2 25	Bran, middlings, corn, gluten and alfalfa.	As certified, ...	4197
3.53	3.00	2.97	7-9	1 90	Corn, barley, wheat and oats.	As certified, ...	4652
4.08	....	4.97	....	1 95	Made from pure grains, cracked corn, seeds and charcoal; (no grit or screenings).	Corn, oats, barley, wheat, buckwheat, Kaffir corn and charcoal.	4957
3.23	3-4	2.60	2-3	2 50	....	Corn, oats, wheat, millet, Kaffir corn, and charcoal.	4548

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
4544	Ideal Chick and Hen Feed, H. B. Kratz & Co., Schwenksville, Pa.	Allentown, Frank J. Erdman.	844	12.12	10.25	--------
		Average,	--------	11.52	10.16	--------
4626	Martin's Mixed Poultry Feed, Martin & Co., Altoona, Pa.	Altoona, Martin & Co.,	926	10.61	11.56	12.75
4625	Martin's Peep Feed, Martin & Co., Altoona, Pa.	Altoona, Martin & Co.,	925	10.32	12.00	12.00
4623	Martin's Peep Mash, Martin & Co., Altoona, Pa.	Altoona, Martin & Co.,	923	9.14	20.00	10.00
4622	Martin's Poultry Mash, Martin & Co., Altoona, Pa.	Altoona, Martin & Co.,	922	8.88	25.81	12-14
3806	Best Mixed Grains for Chickens, C. P. Matthews & Sons, Inc., Monroeton, Pa.	Monroeton, C. P. Matthews & Sons, Inc.	105	12.67	9.38	8-9
4868	Best Mixed Grains for Chickens, C. P. Matthews & Sons, Inc., Monroeton, Pa.	Wilkes-Barre, C. P. Matthews & Sons, Inc.	1168	10.72	10.50	8-9
4932	Best Mixed Grains for Chickens, C. P. Matthews & Sons, Inc., Monroeton, Pa.	Scranton, C. P. Matthews & Sons, Inc.	1232	9.51	11.31	8-9
		Average,	--------	10.96	10.40	--------
4936	Best Mixed Grain for Little Chickens, C. P. Matthews & Sons, Inc.	Scranton, C. P. Matthews & Sons, Inc.	1236	11.83	10.25	8-9
4869	Premium Pure Mixed Grains for Fancy Poultry, C. P. Matthews & Sons, Inc., Scranton, Pa.	Wilkes-Barre, C. P. Matthews & Sons, Inc.	1169	10.95	11.00	--------
4933	Premium Pure Mixed Grains for Fancy Poultry, C. P. Matthews & Sons, Inc., Scranton, Pa.	Scranton, C. P. Matthews & Sons, Inc.	1233	10.36	12.13	--------
		Average,	--------	10.66	11.57	--------
4924	Little Chick Feed, Miner-Hillard Milling Co., Wilkes-Barre, Pa.	Scranton, Miner-Hillard Milling Co.	1224	10.55	9.81	--------
4880	Mixed Chicken Feed, Miner-Hillard Milling Co., Miner's Mills, Pa.	Wilkes-Barre, Miner-Hillard Milling Co.	1180	9.01	9.88	--------

FEEDING STUFFS COLLECTED IN 1910.—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
4.13	....	3.05	....	$2 50	....	Corn, oats, barley, wheat, buckwheat and Kaffir corn.	4544
3.68	....	2.82	....	2 50			
2.90	2.90	3.85	3.69	2 50	Wheat, buckwheat, barley, oats, Kaffir corn, cracked corn, Canada peas and sunflower seeds.	As certified, ...	4626
2.78	3.00	1.62	4.00	3 75	Cracked corn, cracked wheat, cracked rice, cracked Canada peas, cut oats and German millet.	As certified, ...	4625
4.50	3.00	6.97	7.00	2 50	Wheat bran, wheat Middlings, corn meal, alfalfa meal, pea meal, buckwheat flour, meat meal, oil meal and Kaffir corn meal.	As certified, ...	4623
5.18	4-6	6.10	7-9	2 50	Wheat bran, wheat middlings, corn chop, gluten feed, ground oats, meat meal and oil meal.	As certified, ...	4622
3.48	2-3	3.04	4-5	1 70	Kaffir corn, buckwheat grains, wheat screenings, wheat, cracked corn, oyster shells, field peas, and sunflower seeds.	Corn, Kaffir corn, buckwheat, wheat, barley, peas, sunflower seed, oyster shells and wheat screenings, including corn cockle.	3805
3.60	2-3	3.85	4-5	1 75	Kaffir corn, buckwheat grains, wheat screenings, wheat, cracked corn, oyster shells, field peas, and sunflower seeds.	Kaffir corn, oats, barley, wheat, wheat screenings, cracked corn, oyster shells, peas, and sunflower seed.	4868
3.20	2-3	2.95	4-5	1 65	Kaffir corn, buckwheat grains, wheat, cracked corn, oyster shells, field peas and sunflower seeds.	Kaffir corn, buckwheat, wheat, oats, barley, cracked corn, oyster shells, peas and sunflower seed.	4962
3.43	....	3.11	....	1 70			
2.50	2-3	6.77	4-5	1 85	Wheat screenings and cracked corn.	As certified, ...	4966
3.83	....	3.82	....	2 00	....	Corn, oats, barley, wheat, Kaffir corn, peas and sunflower seeds.	4869
3.	....	3.67	....	2 00	Pure mixed grains, ...	Corn, oats, barley, wheat, buckwheat, Kaffir corn, peas, and sunflower seeds.	4963
3.	....	3.74	....	2 00			
3	....	3.52	....	1 90	....	Corn, oats, barley, wheat, Kaffir corn, and millet.	4924
3	....	4.62	....	2 00	....	Corn, oats, barley, wheat, buckwheat, Kaffir corn, sunflower seed, grit and oyster shells.	4880

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
4920	Mixed Chicken Feed, Miner-Hillard Milling Co., Miner's Mills, Pa.	Wilkes-Barre, Miner-Hillard Milling Co.	1220	9.53	10.19	8-9
		Average,		9.27	10.04	--------
4881	No. 1 Scratch Feed, Miner-Hillard Milling Co., Wilkes-Barre, Pa.	Wilkes-Barre, Miner-Hillard Milling Co.	1181	10.89	10.75	--------
4921	No. 1 Scratch Feed, Miner-Hillard Milling Co., Wilkes-Barre, Pa.	Scranton, Miner - Hillard Milling Co.	1221	9.87	10.88	--------
4515	No. 1 Scratch Feed, Miner-Hillard Milling Co., Wilkes-Barre, Pa.	Reading, Strunk & Moyer,	815	11.90	10.94	--------
		Average,		10.88	10.86	--------
4882	Purity Poultry Mash, Miner-Hillard Milling Co., Wilkes-Barre, Pa.	Wilkes-Barre, Miner-Hillard Milling Co.	1182	9.00	13.75	15-17
4050	Alfalfa Poultry Mash, The Otto Weiss Alfalfa Stock Food Co., Wichita, Kan.	Pittsburg, The I. W. Scott Co.	350	7.34	14.44	17.90
5176	Dry-Mash, The Park & Pollard Co., Boston, Mass.	Carnegie, C. A. Foster, ---	1476	10.07	21.44	20.00
4196	Dry Mash Growing Feed, The Park & Pollard Co., Boston, Mass.	York, F. Z. Stauffer, ---	496	9.20	24.69	14.00
4308	Sylva Scratch Feed, Penna. Prima Feed Co., Inc., Harrisburg, Pa.	Williamsport, F. W. Dawson & Son.	608	9.66	10.88	9-10
4331	Purina Mill Feed Chick Feed, Purina Mills, St. Louis, Mo.	Montoursville, J. M. Hayes & Co.	631	11.26	11.06	11.00
3982	Purina Mill Feed, Scratch Size, Purina Mills, St. Louis, Mo.	Greensburg, W. N. Davis,--	282	11.67	11.00	11.00
4330	Purina Mill Feed, Scratch Size, Purina Mills, St. Louis, Mo.	Montoursville, J. M. Hayes & Co.	630	12.17	10.88	11.00

FEEDING STUFFS COLLECTED IN 1910—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
4.33	2-3	3.67	4-5	$1 65	Kaffir corn, buckwheat grains, wheat, cracked corn, oyster shells, peas, sunflower seed and oats.	As certified, ...	4920
3.99	....	4.09	....	1 83			
3.55	....	4.05	....	2 25	....	Corn, oats, barley, wheat, Kaffir corn, buckwheat, peas and sunflower seeds.	4881
3.75	....	3.65	....	1 90	....	Corn, oats, barley, wheat, buckwheat, Kaffir corn, hemp seed and sunflower seeds.	4921
3.18	....	3.15	....	2 15	....	Corn, oats, barley, wheat, buckwheat, Kaffir corn, peas, sunflower seed and grit.	4515
3.49	....	3.61	....	2 10			
5.88	5-7	3.35	8-10	2 25	Green peas, alfalfa meal, wheat midddlings, wheat bran, ground oats, hominy feed and buckwheat middlings.	Alfalfa meal, wheat bran, wheat middlings, ground oats, hominy feed, buckwheat middlings and millet.	4882
3.90	3.84	8.31	....	2 10	Alfalfa, blood, bone, meat, oil meal, bran, shorts, corn chop, charcoal, grit and oyster shell.	Alfalfa, blood, bone, meat and oil meal, bran, shorts, corn chop, Kaffir corn, coal, grit and oyster shell.	4050
3.00	3.00	6.18	10.00	2 50	Bran, middlings, corn, wheat, barley, alfalfa, fish, meat, bone and salt, not colored.	As certified, ...	5176
4.18	3.50	5.02	5.00	2 60	Bran, middlings, corn, wheat, barley, alfalfa, fish, meat, bone and salt, not colored.	As certified, ...	4196
3.23	3.25	4.53	3.50	2 25	Cracked corn, wheat, barley, oats, buckwheat, and sunflower seeds.	As certified, ...	4308
3.92	3.60	3.37	4.00	2 25	Wheat, corn, Kaffir corn, milo maize, millet and recleaned miscellaneous seeds.	Wheat, corn, flaxseed, Kaffir corn, milo maize, millet and a large amount of weed seeds.	4361
4.00	3.60	3.70	4.00	2 25	Wheat, corn, barley, oats, Kaffir corn, milo maize, sunflower and recleaned miscellaneous field seeds.	Wheat, corn, barley, oats, Kaffir corn, milo maize, sunflower seed, flaxseed and a large amount of weed seeds.	3982
3.88	3.60	3.20	4.00	2 20	Wheat, corn, barley, oats, Kaffir corn, milo maize, sunflower and recleaned miscellaneous field seeds.	Wheat, corn, barley, oats, Kaffir corn, milo maize, sunflower seed, flaxseed and a large amount of weed seeds.	4330

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
4398	Purina Mill Feed, Scratch Size, Purina Mills, St. Louis, Mo.	Scotland, M. Ickes,	698	11.84	11.13	11.00
5106	Purina Mill Feed, Scratch Size, Purina Mills, St. Louis, Mo.	Chester, T. F. McCall,	1406	10.86	11.81	11.00
		Average,		11.51	11.21	
5148	American Poultry Feed, The Quaker Oats Co., Chicago, Ill.	Washington, G. W. McBrier.	1448	10.04	12.69	12.00
4102	American Poultry Feed, The Quaker Oats Co., Chicago, Ill.	West Bridgewater, W. W. McCullough.	402	10.64	12.56	12.00
4995	American Poultry Feed, The Quaker Oats Co., Chicago, Ill.	Sharon, J. M. Porter,	1295	9.72	12.75	12.00
		Average,		10.13	12.67	
3974	Red Hen Scratching Grains, The Quaker Qats Co., Chicago, Ill.	Greensburg, McFarland Supply Co.	274	11.25	10.56	9.50
4009	American Hen Scratching Grains, The Quaker Oats Co., Chicago, Ill.	Scottdale, F. V. Perry & Co.	309	11.88	10.38	9.50
3879	Schumacher Little Chick Feed, The Quaker Oats Co., Chicago, Ill.	Coudersport, Eulalia Milling Co.	179	11.50	9.94	10.50
4080	Schumacher Little Chick Feed, The Quaker Oats Co., Chicago, Ill.	Kittanning, J. A. Gault & Co.	380	10.63	10.19	10.50
4573	Schumacher Little Chick Feed, The Quaker Oats Co., Chicago, Ill.	Huntingdon, Stouffer & Brenneman.	873	11.37	10.94	10.00
4517	Schumacher Little Chick Feed, The Quaker Oats Co., Chicago, Ill.	Reading, Strunk & Moyer,	817	10.69	9.69	10.00
		Average,		11.04	10.19	
4645	Schumacher Scratching Grains, The Quaker Oats Co., Chicago, Ill.	Altoona, Central Feed Co.,	945	9.99	10.75	10.00

FEEDING STUFFS COLLECTED IN 1910—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
3.50	3.60	3.02	4.00	$2 25	Wheat, corn, barley, oats, Kaffir corn, milo maize, sunflower and recleaned miscellaneous field seeds.	Wheat, corn, barley, oats, Kaffir corn, milo maize, sunflower seeds, flaxseed and a considerable proportion of weed seeds.	4398
3.73	3.60	3.00	4.00	2 25	Wheat, corn, barley, oats, Kaffir corn, milo maize, sunflower and recleaned miscellaneous field seeds.	Wheat, corn, oats, barley, Kaffir corn, milo maize, sunflower seed and a considerable proportion of weed seeds.	5106
3.78	--------	3.23	--------	2 24			
4.90	3.50	4.15	9.00	1 90	Corn, barley, cottonseed meal and wheat bran.	As certified, ...	5148
6.00	3.50	5.28	9.00	1 75	Corn, barley, cottonseed meal, wheat bran and wheat middlings.	As certified, ...	4102
6.20	3.50	4.95	9.00	2 00	Corn, barley, cottonseed meal and wheat bran.	As certified, ...	4995
5.70	--------	4.79	--------	1 88			
3.93	3.50	2.71	4.50	2 00	Wheat, barley, Kaffir corn, buckwheat, cracked corn, sunflower seed, charcoal and ground marble.	As certified, ...	3974
3.95	3.50	2.55	4.50	38 00	Wheat, barley, Kaffir corn, buckwheat, cracked corn, sunflower seed, charcoal and ground marble.	As certified, ...	4009
3.80	3.50	1.82	3.00	42 00	Ground white and yellow corn, wheat, Kaffir corn, millet, charcoal and marble.	As certified, ...	3879
3.30	3.50	2.25	3.00	2 00	Ground white and yellow corn, wheat, Kaffir corn, millet, charcoal and marble grit.	As certified, ...	4080
3.63	2.50	2.57	5.00	2 25	Corn, wheat, Kaffir corn, millet, charcoal, ground marble, with not to exceed 6 per cent. marble grit and ½ of 1 per cent. poultry charcoal.	Corn, millet, Kaffir corn, charcoal, ground marble grit and small amount of weed seeds.	4573
3.10	2.50	2.27	5.00	2.25	Corn, wheat, Kaffir corn, millet, charcoal, ground marble, with not to exceed 6 per cent. marble grit and ½ of 1 per cent. poultry charcoal.	As certified, ...	4517
3.46	--------	2.22	--------	43 00			
4.13	2.50	2.45	5.00	2 35	Wheat, barley, Kaffir corn, buckwheat, cracked yellow corn, sunflower seeds and ground charcoal, with not to exceed ½ of 1 per cent. poultry charcoal.	As certified, ...	4645

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein. Found.	Crude Protein. Guaranteed.
				Per ct.	Per ct.	Per ct.
3949	Schumacher Scratching Grains, The Quaker Oats Co., Chicago, Ill.	Warren, T. N. Dunham,	249	11.50	10.50	10.50
3876	Schumacher Scratching Grains, The Quaker Oats Co., Chicago, Ill.	Coudersport, Eulalia Milling Co.	176	10.89	10.88	10.50
5023	Schumacher Scratching Grains, The Quaker Oats Co., Chicago, Ill.	Oil City, The Magee Feed Co.	1323	10.35	10.94	10.00
4437	Schumacher Scratching Grains, The Quaker Oats Co., Chicago, Ill.	Harrisburg, I. L. Nailor,	737	11.86	11.50	10.00
5190	Schumacher Scratching Grains, The Quaker Oats Co., Chicago, Ill.	Pitcairn, D. F. Salyards,	1490	10.80	10.75	10.00
4536	Schumacher Scratching Grains, The Quaker Oats Co., Chicago, Ill.	Allentown, Geo. B. Shelly Est.	836	10.50	11.13	10.00
4722	Schumacher Scratching Grains, The Quaker Oats Co., Chicago, Ill.	Munson Station, Jacob Smutzinger.	1022	11.09	10.75	10.00
4518	Schumacher Scratching Grains, The Quaker Oats Co., Chocago, Ill.	Moyer, Strunk & Reading,	818	11.62	10.75	10.00
		Average,	--------	11.06	10.88	--------
4891	Scratch Feed, Robbins Milling Co., Wilkes-Barre, Pa.	Wilkes-Barre, Kirkendall Son Co.	1191	9.71	11.06	--------
5162	Winner Mill Feed, Scratch Size, Robinson-Danforth Co., St. Louis, Mo.	Canonsburg, Canonsburg Milling Co.	1462	10.67	10.97	10.00
4305	Red Hen Scratch Feed, Saginaw Milling Co., Saginaw, Mich.	Brookville, Kline's Sifter Mills.	605	12.08	11.44	11-12

FEEDING STUFFS COLLECTED IN 1910—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
4.25	3.50	3.22	4.50	$40 00	Wheat, barley, Kaffir corn, buckwheat, cracked yellow corn, sunflower seeds and ground charcoal.	As certified, ...	3949
4.00	3.50	2.20	4.50	40 00	Wheat, barley, Kaffir corn, buckwheat, cracked yellow corn, sunflower seeds and ground charcoal.	Wheat, barley, oats, Kaffir corn, buckwheat, cracked yellow corn, sunflower seed and ground charcoal.	3876
3.80	2.50	2.87	5.00	2 00	Wheat, rye, barley, Kaffir corn, buckwheat, corn, sunflower seeds, with not to exceed ½ of 1 per cent. poultry charcoal.	Wheat, rye, barley, Kaffir corn, buckwheat, corn, sunflower seeds, charcoal and trace of weed seeds.	5023
3.60	2.50	2.62	5.00	2 10	Wheat, barley, Kaffir corn, buckwheat, cracked yellow corn, sunflower seeds and ground charcoal, with not to exceed ½ of 1 per cent. poultry charcoal.	Wheat, barley, oats, Kaffir corn, buckwheat, cracked yellow corn, sunflower seed and charcoal.	4437
3.50	2.50	2.24	5.00	2 25	Wheat, rye, barley, Kaffir corn and sunflower seeds, with not to exceed ½ of 1 per cent. poultry charcoal.	As certified, ...	5190
4.13	2.50	3.10	5.00	2 15	Wheat, barley, Kaffir corn, buckwheat, cracked yellow corn, sunflower seeds and ground charcoal, with not to exceed ½ of 1 per cent. poultry charcoal.	As certified, ...	4536
3.45	2.50	2.87	5.00	2 00	Wheat, barley, Kaffir corn, buckwheat, cracked yellow corn, sunflower seeds and ground charcoal, with not to exceed ½ of 1 per cent. poultry charcoal.	As certified, ...	4722
3.85	2.50	2.80	5.00	2 00	Wheat, barley, Kaffir corn, buckwheat, cracked yellow corn, sunflower seeds and ground charcoal, with not to exceed ½ of 1 per cent. poultry charcoal.	As certified, ...	4578
3.86	....	2.70	....	41 89			
4.15	....	4.52	....	2 00	....	Corn, oats, barley, wheat, buckwheat, Kaffir corn, sunflower seed, flaxseed and weed seeds.	4891
3.87	3.60	3.07	6.00	2 00	Wheat, corn, oats, barley, Kaffir corn, milo maize, sunflower seeds, re-cleaned and miscellaneous seeds.	Wheat, corn, oats, barley, Kaffir corn, milo maize, sunflower seeds and a large proportion of weed seeds.	5169
3.48	2.50-3	2.85	4-5	2 20	Grains and seeds, ...	Corn, oats, barley, wheat, buckwheat, Kaffir corn and sunflower seeds.	4306

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein. Found.	Crude Protein. Guaranteed.
				Per ct.	Per ct.	Per ct.
4207	Oriole Brand Poultry Feed, Wm. G. Scarlett & Co., Baltimore, Md.	York, Mitzel & Sloat, -----	507	11.31	11.88	11.67
4208	Shield Brand Chick Feed, Wm. G. Scarlett & Co., Baltimore, Md.	York, Mitzel & Sloat, -----	508	10.60	11.88	12.01
4209	Empire Brand Pigeon Feed, Wm. G. Scarlett & Co., Baltimore, Md.	York, Mitzel & Sloat, -----	509	10.68	14.56	12.50
4774	Mixed Grains, Schneider Bros., Mt. Carmel, Pa.	Mt. Carmel, Schneider Bros.	1074	11.90	9.94	--------
4944	Mixed Chicken Grain, Scranton Flour and Grain Co., Scrantoin, Pa.	Scranton, Scranton Flour and Grain Co.	1244	9.92	9.56	--------
4410	Purity Brand Chick Feed, W. A. Simpson & Co., Baltimore, Md.	Carlisle, S. B. Jackson, --	710	9.28	7.25	9.32
4411	Purity Brand Scratch Feed, W. A. Simpson & Co., Baltimore, Md.	Carlisle, S. B. Jackson, --	711	9.06	8.00	9.06
3987	Egg Mash Feed, Smith Bros., Bradford, Pa.	Bradford, Smith Bros., ---	237	12.81	23.00	17-20
4959	Swift's Poultry Bone, Swift & Co., Newark, N. J.	Butler, H. J. Klingler & Co.	1259	7.05	25.19	25.00
3745	Excelsior Chicken Feed, Swope Bros., Johnstown, Pa.	Johnstown, Swope Bros.,-	45	12.27	10.19	8.00
4500	W. M. C. Chick Feed, Wertz Milling Co., Reading, Pa.	Reading, Wertz Milling Co..	800	10.47	11.50	12.00
4501	W. M. C. Scratch Feed, Wertz Milling Co., Reading, Pa.	Reading, Wertz Milling Co.,	801	10.89	11.81	11.00
4493	Mashed Feed for Poultry, Geo. W. Wertz, Wernersville, Pa.	Reading, Geo. W. Wertz,--	793	8.34	16.38	16.00
	ANIMAL BY-PRODUCTS.					
4055	Ground Beef Scraps, American Poultry Food Co., York, Pa.	Pittsburg, The I. W. Scott Co.	355	9.96	42.46	--------

FEEDING STUFFS COLLECTED IN 1910—Continued.

Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
4.95	3.87	4.35	4.50	$2 10	Kaffir corn, cracked corn, millet, seeds, grain, etc., properly blended.	Kaffir corn, cracked corn, millet, oats, wheat, barley, buckwheat, peas, hemp seed, flaxseed and a considerable proportion of weed seeds.	4207
4.73	3.50	4.00	4.00	2 15	Kaffir corn, cracked corn, millet, seeds, grain, etc., properly blended.	Kaffir corn, cracked corn, millet, peas, wheat, oats, barley, flaxseed and small amount of weed seeds.	4208
6.00	5.90	5.14	3.50	2 15	Canada peas, Kaffir corn, cracked corn, millet, seeds, grains, etc., properly blended.	Canada peas, Kaffir corn, cracked corn, millet, oats, wheat, barley, buckwheat, hemp seed, flaxseed, grit and weed seeds.	4209
3.58	--------	3.40	--------	2 10	Cracked corn, oats, wheat, buckwheat, and sunflower seeds.	As certified, ----------	4774
3.65	--------	2.90	--------	2 00	----------------------------	Corn, oats, wheat, buckwheat, sunflower seed, mica, grit and oyster shells.	4944
3.57	4.16	1.65	1.23	2 50	----------------------------	Cracked corn, oats, wheat, millet, grit and oyster shells.	4410
3.33	3.34	2.08	1.18	2 50	----------------------------	Corn, oats, barley, wheat, buckwheat, Kaffir corn, sunflower seeds, mica, grit and oyster shells.	4411
5.33	4.00	7.56	10.00	40 00	Meal, middlings, alfalfa, clover meal, meat meal, oil meal and charcoal.	As certified, ----------	3067
1.47	5.00	1.45	--------	2 45	----------------------------	Poultry bone, --------	4959
3.40	2.00	4.15	--------	1 75	Corn, Kaffir corn, buckwheat, wheat, oats, barley, sunflower seed, milo maize, oil cake, grit and oyster shells.	Corn, buckwheat, wheat, oats, barley, sunflower seed, grit and oyster shells.	3745
3.48	2.50	3.40	3 00	2 25	Cracked corn, wheat, Kaffir corn, wheat screenings and millet.	Cracked corn, wheat, Kaffir corn, wheat screenings, millet and trace of oats and corn cockle.	4500
3.14	5.00	2.85	4.00	2 25	Wheat, corn, Kaffir corn, wheat screenings, millet, buckwheat, grit, sunflower seeds and oats.	Wheat, corn, Kaffir corn, wheat screenings, millet, buckwheat, grit, sunflower seeds, oats and trace of corn cockle.	4501
5.40	5.00	5.30	7.00	2 35	Corn, oats, middlings, bran and animal meal.	As certified, ----------	4498
38.55	--------	--------	--------	3 50	----------------------------	Ground beef scraps,--	4055

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
4624	Meat Meal for Poultry, Baugh & Sons Co., Baltimore, Md.	Altoona, Martin & Co.,	924	8.68	65.81	50-55
5104	Ground Beef Scrap, The Fritz Co., Philadelphia, Pa.	Chester, T. F. McCall,	1404	5.72	48.81	50-55
4181	D. W. Romaine's Evaporated Boiled Beef and Bone, D. W. Romaine, Jersey City, N. J.	Elizabethtown, A. W. Martin.	481	3.61	39.38	45.00
4321	Spratt's Patent Ground Meat, Spratt's Patent, Ltd., Newark, N. J.	Williamsport, Gohl & King,	621	12.54	46.81	43.00
3916	Spratt's Patent Ground Meat, Spratt's Patent, Ltd., Newark, N. J.	Kane, J. A. Stoll & Co.,	216	8.96	48.75	43.00
		Average,		10.75	47.78	
4958	Swift's Beef Scrap, Swift & Co., Newark, N. J.	Butler, H. J. Klingler & Co.	1258	6.45	59.38	55-60
4757	Darling's Pure Ground Beef Scrap, The Van Iderstine Co., Long Island City, N. Y.	Sunbury, Blank & Gottshall.	1057	6.01	50.88	55.00
	CONDIMENTAL STOCK AND POULTRY FOODS.					
4607	Chick Manna, F. P. Cassel & Son, Lansdale, Pa.	Wilkinsburg, Johnston & Smith.	907	9.56	13.38	12-14
4817	Lee's Egg Maker and Chick Grower, Geo. H. Lee Co., Omaha, Neb.	Selinsgrove, H. J. Doebler,	1117	7.26	31.31	
4388	Little Giant Stock and Poultry Food, Little Giant Stock Food Co., Newark, N. J.	Shippensburg, John P. Wadel.	688	13.85	20.13	21-28
4163	Puritan Chick Food, Puritan-American Poultry Food Mfg. Co., Bound Brook, N. J.	Columbia, P. G. Brenneman.	463	9.18	12.56	12.50
4369	Puritan Chick Food, Puritan-American Poultry Food Mfg. Co., Bound Brook, N. J.	Chambersburg, J. H. Smith & Son.	669	8.29	13.75	12.50
		Average,		8.73	13.16	

FEEDING STUFFS COLLECTED IN 1910—Continued.

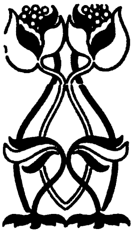
Crude Fat.		Crude Fiber.		Price per ton or cwt.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
11.60	14-16	1.20	--------	$3 50	Ground pure beef and pork cracklings.	As certified, ----------	4624
14.45	10.12	1.17	1.00	3 25	Ground beef cracklings, --	As certified, ----------	5104
18.50	15.00	5.77	--------	2 60	Absolutely pure fresh meat and sheepsheads boiled, dried and ground into meal.	As certified, ----------	4181
15.01	11.00	2.37	2.00	4 00	----------------------------	Ground meat, -------	4321
16.20	11.00	--------	2.00	3 00	----------------------------	Ground meat, -------	3916
15.61	--------	--------	--------	3 50			
11.65	10-15	2.40	--------	3 20	----------------------------	Beef scraps, ----------	4958
12.30	5.00	1.67	3.00	2 85	----------------------------	Ground beef scraps,--	4757
4.42	4-5	1.70	2.54	10.00	Granular corn and oats, crackers, wheat middlings, gentiana, zingiber, creta, anisum, ferri sulphas, sodium chloride, sulphur, starch, meat and bone.	As certified, ----------	4607
2.26	--------	10.09	--------	10 00	Granulated blood (deodorized), linseed meal (55 per cent.), potassium nitrate, sodium sulphate, ginger, gentian, foenugreek, iron sulphate, cayenne, common salt, sulphur and charcoal, 45 per cent.	As certified, ----------	4817
8.35	9-12	15.47	14-15	20 00	Sterilized meat meal, sterilized bone-flour, sterilized ground blood, C. P. charcoal, imported German fennel seed, imported French gentian root, imported African foenugreek seed and imported Spanish licorice root.	As certified, ----------	4388
8.00	7.50	4.98	--------	5 00	Corn, wheat, meat, oyster shell, sulphur, anise seed, charcoal and foenugreek.	As certified, ----------	4168
7.77	7.50	4.90	5.00	3 25	Corn, wheat, meat, oyster shell, sulphur, anise seed, charcoal and foenugreek.	As certified, ----------	4369
7.89	--------	4.94	--------	4 13			

TABLE IX.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
4394	Sitley's Peerless Brand Condition Food, Sitley & Son, Inc., Camden, N. J.	Scotland, M. Ickes, --------	694	8.70	15.98	--------
4395	Sitley's Peerless Brand Poultry Food, Sitley & Son, Inc., Camden, N. J.	Scotland, M. Ickes, --------	695	9.10	19.72	--------
4974	Standard Stock Food, Standard Stock Food Co., Omaha, Neb.	New Castle, U. Z. Sweesy,	1974	6.61	9.56	1.00
4975	Standard Poultry Food, Standard Stock Food Co., Omaha, Neb.	New Castle, U. Z. Sweesy,	1975	7.50	17.18	1.00

FEEDING STUFFS COLLECTED IN 1910—Concluded.

Crude Fat.		Crude Fiber.		Price per pound.	Certified Composition.	Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
9.35	--------	10.08	--------	$-----	-------------------------------	Cottonseed meal, linseed meal, sulphur, ginger, saltpeter, pepper, foenugreek, assafoetida and cake soda.	4394
4.88	--------	14.65	--------	--------	-------------------------------	Cottonseed meal, linseed meal, sulphur, ginger, alum, pepper, assafoetida and cake soda.	4395
4.90	1.00	14.12	20.00	17	Anise seed, caraway seed, coriander seed, foenugreek seed, gentian root, ginger root, licorice root, yellow dock root, capsicum, corn germ, sulphur, bicarbonate of soda, oil meal, charcoal and salt.	As certified, ---------	4974
2.75	1.00	22.98	20.00	10	Gentian root, ginger root, capsicum, dried blood, bone meal, oyster shell, charcoal, alfalfa meal and salt.	As certified, ---------	4975



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Commonwealth of Pennsylvania.

DEPARTMENT OF AGRICULTURE.

DAIRY AND FOOD DIVISION.

LAW BULLETIN.

Containing the Law Creating a Department of Agriculture in Pennsylvania, the various Acts of Assembly Committed to the Dairy and Food Division for Enforcement, a Brief Digest of Numerous Decisions of Courts Relating to the Aforesaid Laws, and Rules and Regulations.

N. B. CRITCHFIELD, *Secretary of Agriculture,*
JAMES FOUST, *Dairy and Food Commissioner.*

BULLETIN No. 209.

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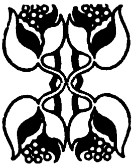

PREFACE.

The following compilation of the statutes relating to the creation of the office of Dairy and Food Commissioner and his duties, etc., under such statutes, are published to meet the demand coming from persons who desire the information they contain.

The call for such information is great, and as this publication contains the Acts of Assembly, the enforcement of which is placed in the hands of the Dairy and Food Commissioner, it is of special importance.

There is no more effectual method for securing obedience to law than that of giving notice to the public of its requirements; and any person wishing to be informed, whether he be manufacturer, dealer or consumer, can secure proper information upon this subject by applying to the Dairy and Food Commissioner for this Bulletin.

A brief summary of various court decisions relating to these statutes is appended, and will be found convenient for reference by attorneys and others interested.

N. B. Critchfield

Secretary of Agriculture.

⁂

DEPARTMENT OF AGRICULTURE.

DAIRY AND FOOD DIVISION.

Harrisburg, Pennsylvania, August 1st, 1911.

To Whom it may Concern:

The accompanying digest of Acts of Assembly relating to the organization of the Department of Agriculture, and the Dairy and Food Division in particular, is respectfully presented for the information of all interested in the manufacture, sale or use of dairy and food products.

The several preceding large editions of bulletins of a similar character are entirely exhausted, and the present edition has therefore been prepared and printed to meet the constantly increasing demand from manufacturers, dealers and others for information concerning such legislation as is included within the limited space of this publication.

Special attention is directed to the important dairy and food laws enacted by the Legislatures of 1909 and 1911, which are printed within the pages of this Bulletin. The rules and regulations relating to the Pure Food Act of May 13th, 1909, will also prove of interest and value to those concerned.

The continued favorable co-operation of the press, trade and the public in general, in enforcing the aforesaid laws, is respectfully requested, believing that the cause is a most worthy one, protecting human life, as well as preventing gross fraud and deception in the sale of dairy and food products.

Very respectfully yours,

James Foust

Dairy and Food Commissioner.

ACT CREATING A DEPARTMENT OF AGRICULTURE.

AN ACT

To establish a Department of Agriculture and to define its duties and to provide for its proper administration.

Section 1. Be it enacted by the Senate and House of Representatives of the Commonwealth of Pennsylvania in General Assembly met, and it is hereby enacted by the authority of the same, That there be and hereby is established a Department of Agriculture, to be organized and administered by an officer who shall be known as the Secretary of Agriculture, who shall be appointed by the Governor, by and with the advice and consent of the Senate, for a term of four years at an annual salary of three thousand five hundred dollars; and, who before entering upon the duties of his office shall take and subscribe the oath prescribed in Article seven of the Constitution. Said secretary shall be ex-offico secretary of the State Board of Agriculture, and shall succeed to all the powers and duties now conferred by law upon the secretary of said Board.

Section 2. That it shall be the duty of the Secretary of Agriculture, in such ways as he may deem fit and proper, to encourage and promote the development of agriculture, horticulture, forestry and kindred industries; to collect and publish statistics and other information in regard to the agricultural industries and interests of the State; to investigate the adaptability of grains, fruits, grasses and other crops to the soil and climate of the State, together with the diseases to which they are severally liable and the remedies therefor; to obtain and distribute information on all matters relating to the raising and care of stock and poultry, the best methods of producing wool and preparing the same for market, and shall diligently prosecute all such similar inquiries as may be required by the agricultural interests of the State, and as will best promote the ends for which the Department of Agriculture is established. He shall give special attention to such questions relating to the valuation and taxation of farm land, to the variation and diversification in the kinds of crops and methods of cultivation and their adaptability to changing markets as may rise from time to time in consequence of a change of methods, means and rates of transportation, or in the habits or occupation of the people of the State and elsewhere, and shall publish, as frequently as practicable, such information thereon as he shall deem useful. In the performance of the duties prescribed by this act, the Secretary of Agriculture shall, as far as practicable, make use of the facilities provided by the State Agricultural Experiment Station, the State Board of Agriculture and the various State and county societies and organizations maintained by agriculturists and horticulturists, whether with or without the aid of the State, and shall, as far as practicable, enlist the aid of the State Geological Survey for the purpose of obtaining and publishing useful information respecting the economic relations of geology to agriculture, forestry and kindred industries. He shall make an annual report to the Governor, and shall publish, from time to time, such bulletins of information as he may deem useful and advisable. Said report and bulletins shall be printed by the State Printer in the same manner as other public documents, not exceeding five thousand copies of any one bulletin.

Section 3. That it shall be the duty of the Secretary to obtain and publish information respecting the extent and condition of forest lands in this State; to make and carry out rules and regulations for the enforcement of all laws designed to protect forests from fire and from all illegal depredations and destructions, and report the same annually to the Governor; and, as far as practicable, to give information and advice respecting the best methods of preserving wood lands and starting new plantations. He shall also, as far as practicable, procure statistics of the amount of timber cut during each year, the purposes for which it is used, and the amount of timber land thus cleared as compared with the amount of land newly brought under timber cultivation, and shall in general, adopt all such measures as in his judgment may be desirable and effective for the preservation and increase of the timber lands of this State, and shall have direct charge and control of the management of all forest lands belonging to the Commonwealth, subject to the provisions of law relative thereto. The said Secretary shall also be and hereby is charged with the administration of all laws designed to prevent fraud or adulteration in the preparation, manufacture or sale of articles of food, the inspection, sale or transportation of the agricultural products, or imitations thereof, and all laws relating to diseases of domestic animals, and to the manufacture and inspection of commercial fertilizers.

Section 4. There shall be one Deputy Secretary, who shall be appointed by the Governor for the term of four years, at a salary of three thousand dollars a year, who shall also be a Director of Farmers' Institutes. The other officers of the Department shall be appointed by the Governor for the term of four years, and shall be an Economic Zoologist, a Commissioner of Forestry,* a Dairy and Food Commissioner who shall have practical experience in the manufacture of dairy products, and State Veterinarian who shall be a graduate of some reputable veterinary college, who shall receive an annual salary of twenty-five hundred dollars each. The Dairy and Food Commissioner shall, under the direction of the Secretary, perform the duties prescribed by an act approved May twenty-sixth, one thousand eight hundred and ninety-three. The Governor is hereby authorized to appoint one chief clerk of the Department at an annual salary of sixteen hundred dollars, one stenographer at a salary of eight hundred dollars a year, and one messenger at a salary of six hundred dollars a year; and the Dairy and Food Commissioner, the Commissioner of Forestry and the Economic Zoologist shall each have a clerk, who shall be appointed by the Governor, and who shall serve under the direction of the respective commissioners aforesaid, and receive a salary of fifteen hundred dollars a year each.

Section 5. That it shall be the duty of the Superintendent of Institutes to arrange them in such manner as to time and places of holding the same as to secure the greatest economy and efficiency of service, and to this end he shall, in each county where such institutes are to be held, confer and advise with the local member of the State Board of Agriculture, together with representatives duly appointed by each county agricultural, horticultural and other like organizations with reference to the appointment of speakers and other local arrangements.

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*The office of Commissioner of Forestry was taken out of the Department of Agriculture by the Act of 1901, establishing a Department of Forestry.

Section 6. That the Secretary may, at his discretion, employ experts for special examinations or investigations, the expenses of which shall be paid by the State Treasurer in the same manner as like expenses are provided by law, but not more than five thousand dollars shall be so expended in any one year. In his annual report to the Governor, he may include so much of the reports of other organizations as he shall deem proper, which shall take the place of the present agricultural reports, and of which thirty-one thousand six hundred copies shall be published and distributed as follows:

To the Senate, nine thousand copies; to the House of Representatives, twenty thousand copies; to the Secretary of Agriculture, two thousand copies; to the State Librarian, for distribution among public libraries and for reserve work, five hundred copies, and to the State Agricultural Experiment Station, one hundred copies.

Section 7. That the Secretary of Agriculture shall have an office at the State Capitol, and it is hereby made the duty of the Commissioners of Public Buildings and Grounds to provide the necessary rooms, furniture and apparatus for the use of the Department.

Section 8. That all acts or parts of acts inconsistent herewith be and the same are hereby repealed.

Approved—March 13, 1895.

ACT PROVIDING FOR DAIRY AND FOOD COMMISSIONER.

AN ACT

To enlarge the powers of the State Board of Agriculture, to authorize the said Board to enforce the provisions of the act, entitled "An act for the protection of the public health, and to prevent adulteration of dairy products and fraud in the sale thereof," approved May twenty-one, Anno Domini one thousand eight hundred and eighty-five, and of other acts in relation to dairy products: to authorize the appointment of an agent of the said Board who shall be known as the "Dairy and Food Commissioner," and to define his duties and fix his compensation, being supplementary to an act, entitled "An act to establish a State Board of Agriculture," approved May eighth, Anno Domini one thousand eight hundred and seventy-six.

Section 1. Be it enacted, &c., That the State Board of Agriculture be and is hereby empowered and charged with the enforcement of the provisions of the act, entitled "An act for the protection of the public health, and to prevent the adulteration of dairy products and fraud in the sale thereof," approved May twenty-one, Anno Domini one thousand eight hundred and eighty-five, and with the enforcement of the various provisions of all other laws now enacted, or hereafter to be enacted, prohibiting or regulating the adulteration or imitation of butter, cheese or other dairy products.

Section 2. That for the purpose of securing the enforcement of the provisions of the said laws concerning dairy products, the president of the said State Board of Agriculture be and hereby is authorized and empowered to appoint an agent of the said Board, who shall be known by the name and title of the "Dairy and Food Commissioner," who shall hold his office for the term of two years, or until his successor shall be duly appointed and qualified, and shall receive a salary of two thousand dollars per annum and his necessary expenses incurred in the discharge of his official duties under this act. The said agent shall be charged under the direction of the said Board with the execution and enforcement of all laws now enacted, or hereafter to be enacted, in relation to the adulteration or imitation of dairy products.

Section 3. That the said agent of the said Board, the said Dairy and Food Commissioner, is hereby authorized and empowered, subject to the approval of the said State Board of Agriculture, to appoint and fix the compensation of such assistants, agents, experts, chemists, detectives and counsel, as may be deemed by him necessary for the proper discharge of the duties of his office, and for the discovery and prosecution of violations of the said laws: Provided, That the entire expenses of the said agent and of all his assistants, agents, experts, chemists, detectives and counsel (salaries included), shall not exceed the sum appropriated for the purposes of this act.

Section 4. That the said agent of the State Board of Agriculture and such assistants, agents, experts, chemists, detectives and counsel, as he shall duly authorize for the purpose, shall have full access, egress and ingress, to all places of business, factories, farms, buildings, carriages, cars, vessels and cans, used in the manufacture, transportation and sale of any dairy products, or of any adulteration or imitation thereof. They shall also have power and authority to open any package, can or vessel, containing dairy products, or any adulteration or imitation thereof, which may be manufactured, sold or exposed for sale, in violation of any of the provisions of any act now enacted or which may be hereafter enacted in relation to dairy products, or the adulteration or imitation thereof, and they shall also have power to take from such package, can or vessel, samples for analysis.

Section 5. That all penalties and costs received by the said State Board of Agriculture for violations of the said act of May twenty-one, Anno Domini one thousand eight hundred and eighty-five, and of other acts now enacted or hereafter to be enacted, prohibiting or regulating the adulteration or imitation of butter, cheese or other dairy products, shall be appropriated by the said Board to the payment only of the necessary expenses incurred by the said Dairy and Food Commissioner and his assistants and agents in the investigation, discovery and prosecution of violations of the said act.

Section 6. That all charges, accounts and expenses of the said Commissioner, and of all the assistants, agents, experts, chemists, detectives and counsel employed by him, shall be paid by the Treasurer of the State in the same manner as other accounts and expenses of the said State Board of Agriculture are now paid as provided by law.

Section 7. That the said Commissioner shall make annual reports of his work and proceedings, and shall report in detail the number and names of the assistants, agents, experts, chemists, detectives and counsel employed by him, with their expenses and disbursements, the number of prosecutions, the number of convictions and the penalties recovered in each case, which report shall be presented to the said State Board of Agriculture at its annual meeting.

Approved—The 26th day of May, A. D. 1893.

PURE FOOD ACT. 1909.

AN ACT

Relating to food; defining food; providing for the protection of the public health, and the prevention of fraud and deception, by prohibiting the manufacture or sale, the offering for sale or exposing for sale, or the having in possession with intent to sell, of adulterated, misbranded, or deleterious foods; prescribing certain duties of the Dairy and Food Commissioner in reference thereto; and providing penalties for the violation thereof.

Section 1. Be it enacted, &c., That it shall be unlawful for any person, firm, copartnership, limited partnership, joint-stock company, or corporate body, by himself, herself, itself, or themselves, or by his, her, its, or their agents, servants, or employes, to manufacture, sell, offer for sale, expose for sale, or have in possession with intent to sell, any article of food which is adulterated or misbranded within the meaning of this act.

Section 2. That the term "Food," as used in this act, shall include not only every article used for food by man, but also every article used for, or entering into the composition of, or intended for use as an ingredient in the preparation of, food for man.

That the term "Person," as used in this act, shall include individuals, firms, copartnerships, limited partnerships, joint-stock companies, and bodies corporate, as well as all officers, agents, servants, employes, or others acting for any of the same, and shall be taken as applying in the singular or plural as the case may require.

Section 3. That for the purpose of this act, an article of food shall be deemed to be adulterated,—

First. If any substance has been mixed or packed with it, so as to reduce or lower or injuriously affect its quality, strength, or purity.

Second. If any substance has been substituted, wholly or in part, for the article.

Third. If any valuable constituent of the article has been, wholly or in part, abstracted.

Fourth. If it be mixed, colored or changed in color, coated, polished, powdered, stained, or bleached, whereby damage or inferiority is concealed, or so as to deceive or mislead the purchaser; or if by any means, it is made to appear better or of greater value than it is.

Fifth. If it contains any added sulphurous acid, sulphur dioxide, or sulphites, benzoate acid or benzoates, except as hereafter provided; or if it contains any added boric acid or borates, salicylic acid or salicylates, formaldehyde, hydrofluoric acid or fluorides, fluoborates, fluosilicates, or other fluorine compounds, dulcin, glucin, saccharin, alum, compounds of copper, bethanapthol, hydronapthol, abrastol, asaprol, oxides of nitrogen, nitrous acid or nitrates, pyroligneous acid, or other added ingredients deleterious to health; or if, in the case of confectionery, it contains any of the substances mentioned in this paragraph, or any mineral substance, or injurious color or flavor, alcoholic liquor, or any other ingredients, not herein mentioned, deleterious to health: Providing, That this act shall not be construed to prohibit the use of harmless colors of any kind, in confectionery, when used for coloring, and not for any fraudulent purpose: And provided further, That nothing in this act shall be construed to prohibit the use of common salt, sugar, pure corn syrup, pure glucose, wine vinegar, cider vinegar, malt vinegar, sugar vinegar, glucose vinegar, distilled vinegar, spices or their essential oils, alcohol (except in confectionery), edible oils, edible fats, wood smoke applied directly as generated, or proper refrigeration. And provided further, That in the manufacture of confectionery the use of alcohol shall be permitted as it may be found in customary alcoholic tinctures or extracts used for flavoring purposes only, and as a solvent for glazes, and that oil of sweet birch, or methyl-salicylic ester, may be used as a substitute for oil of wintergreen as a flavor: And provided further, That in the preparation of dried fruits and molasses, sulphur dioxide, either free or in simple combination, may be used in such quantities as will not render said dried fruits or molasses deleterious to health; and that sodium benzoate may be used in the preparation of those articles of food in which it has heretofore been generally used, in quantities not exceeding one-tenth (1-10) of one per centum, or benzoic acid, equivalent thereto: And provided further, That when any quantity of sodium benzoate is used in any article of food, or any quantity of sulphur dioxide is used in the preparation of dried fruits or molasses, the fact that sodium benzoates or sulphur dioxide has been used in the preparation thereof shall be plainly stated on each package of such food.

Sixth. If it consists of, or is manufactured in whole or in part from, a diseased, contaminated, filthy, or decomposed substance, either animal or vegetable; or an animal or vegetable substance produced, stored, transported, or kept in a way or manner that would render the article diseased, contaminated, or unwholesome; or if it is any part of the product of a diseased animal, or the product of an animal that has died otherwise than by slaughter.

Section 4. That for the purpose of this act, an article shall be deemed to be misbranded,—

First. If it be an imitation of, or offered for sale under, the name of another article.

Second. If it be labeled or branded so that it may deceive or mislead the purchaser; or purport to be a foreign product, when not so; or if the contents of the package as originally put up shall have been removed, in whole or in part, and other inferior contents shall have been placed in such package.

Third. If the package containing it, or its label, shall bear any statement, design, or device, regarding the substances or ingredients contained therein, which statement, design, or device shall be false or misleading in any particular.

Fourth. If it be a mixture or compound which may be known, or from time to time hereafter known, as an article of food, unless it be accompanied on the label or brand with a statement that it is a mixture or compound and a statement of the substance entering into said mixture or compound. All labeling of packages required by this act shall be on the main label of each package, and in type not less than eight point, brevier caps, in size,—unless the size of the package will not permit the use of eight-point cap type, in which case the size of the type may be reduced proportionately,—and in such position and terms as may be plainly seen and read by the purchaser: Provided, That nothing in this act shall be construed as requiring or compelling the proprietors, manufacturers, or sellers of proprietary foods to disclose their trade formulas, except in so far as may be necessary under the provisions of this act to avoid adulteration, imitation, or misbranding.

Section 5. When the Dairy and Food Commissioner, or his agent shall obtain an article of food, or a sample or portion thereof, from any person, for the purpose of determining whether the same is adulterated or misbranded within the meaning of this act, and it shall be found that the said article of food is adulterated or misbranded within the meaning of this act, then the Dairy and Food Commissioner shall proceed against the said person, from whose store, warehouse, or other place of business said article, sample, or portion thereof, shall have been obtained, for a violation of the provisions of this act.

But no prosecution shall be sustained, under the provisions of this act, against a retail dealer for the selling, offering for sale, exposing for sale, or having in possession with intent to sell, of any adulterated or misbranded article of food, as defined herein, if the retail dealer from whom the said article of food, sample, or portion thereof, was obtained by the Dairy and Food Commissioner or his agent, can establish a guaranty, signed by the manufacturer or wholesale dealer, or jobber or distributor, residing in the United States, from whom such article of food was purchased or procured, to the effect that the same is not adulterated or misbranded within the meaning of this act designating it.

Said guaranty to afford protection shall contain the name and address of the manufacturer or wholesale dealer, or jobber or distributor, making the sale of such article of food to such retailer, and in such case the said manufacturer or wholesale dealer, or jobber or distributor, so as aforesaid giving such guaranty, shall be amenable to the prosecution, fines and other penalties which would attach, in due course, to the retailer holding such guaranty under the provisions of this act, for a violation hereof; and every manufacturer or wholesale dealer, or jobber or distributor, giving a guaranty under the provisions of this act shall be held responsible, and shall be proceeded against for the adulteration or misbranding of any article of food sold under said guaranty, and shall be subject to the penalties for the violation of the provisions of this act. No such guaranty shall operate as a defense to prosecution for a violation of the provisions of this act, if the retailer holding such guaranty shall continue to sell the same article of food after written or printed notice from the Dairy and Food Commissioner, or his agent, that such article is adulterated or misbranded within the meaning of this act.

But if said person shall violate the provisions of paragraph six, section three of this act, by having stored or transported or kept said article, in said paragraph mentioned, in a way or manner to render it diseased, contaminated, or unwholesome, said person shall be proceeded against for a violation of the provisions of this act; and it shall not be necessary for conviction that any article, sample, or portion thereof, shall be obtained by the Dairy and Food Commissioner, or his agent, as a condition precedent to prosecution.

Section 6. For the purpose of this act, an article shall be deemed to be the same article,—

First. When it shall be of the same brand, or have thereon the same label, and shall be adulterated or misbranded in the same way.

Second. When it is not labeled or branded, but is sold, offered for sale, or exposed for sale under the same name, and adulterated or misbranded in the same way.

Third. When, although sold, offered for sale, or exposed for sale under another name, or labeled or branded in a different way, it shall be found to be the product of the same manufacturer, grower, or maker, and to be adulterated or misbranded in the same way: Provided, however, That an article shall be deemed to be adulterated in the same way if it shall contain the same adulterant substance or substances.

Section 7. Any person who shall violate any of the provisions of this act shall be guilty of a misdemeanor, and, upon conviction thereof, shall be sentenced to pay a fine of not less than sixty dollars nor more than one hundred dollars.

Section 8. The Dairy and Food Commissioner of the State shall be charged with the enforcement of the provisions of this act and shall make rules and regulations for the proper enforcement thereof, and shall cause such rules and regulations to be published in the official bulletin in the issue immediately following the preparation of the same.

Section 9. All fines and penalties imposed and recovered for the violation of any of the provisions of this act shall be paid to the Dairy and Food Commissioner or his agent, and by the Dairy and Food Commissioner be paid into the State Treasury, for the use of the Commonwealth.

Section 10. The following acts of Assembly; namely,—An act, entitled "An act to provide against the adulteration of food, and providing for the enforcement thereof," approved the twenty-sixth day of June, Anno Domini one thousand eight hundred and ninety-five:

And an act, entitled "An act for the protection of public health, by prohibiting the manufacture and sale, offering for sale, or having in possession with intent to sell, within the State, of adulterated, misbranded, poisonous, or deleterious foods and confections; regulating the enforcement of the provisions hereof; providing for the protection of persons buying and selling adulterated or misbranded foods and confections under a guaranty; and providing penalties for the violation thereof," approved the first day of June, Anno Domini one thousand nine hundred and seven,—be, and the same are hereby repealed.

Provided, nevertheless, That this act shall not apply to, nor in any way affect,—

An act entitled "An act to prohibit the adulteration or coloring of milk and cream by the addition of so-called preservatives or coloring matter, and to provide for the enforcement of the same," approved the tenth day of June, Anno Domini one thousand eight hundred and ninety-seven:

And the amendment thereto, approved the nineteenth day of April, Anno Domini one thousand nine hundred and one, entitled "An act to amend the first section of an act, entitled 'An act to prohibit the adulteration or coloring of milk and cream by the addition of so-called preservatives or coloring matter, and to provide for the enforcement of the same,'" approved the tenth day of June, Anno Domini one thousand eight hundred and ninety-seven;

Nor the act, entitled "An act to prohibit the manufacture and sale of oleomargarine, butterine, and other similar products, when colored in imitation of yellow butter; to provide for license fees to be paid by manufacturers, wholesale and retail dealers, and by proprietors of hotels, restaurants, dining-rooms and boarding-houses, for the manufacture and sale of oleomargarine, butterine, or other similar products, not colored in imitation of yellow butter; and to regulate the manufacture and sale of oleomargarine, butterine, or other similar products, not colored in imitation of yellow butter, and prevent and punish fraud and deception in such manufacture and sale as an imitation butter; and to prescribe penalties and punishment for violations of this act, and the means and the method of procedure for its enforcement, and regulate certain matters of evidence in such procedure," approved the twenty-ninth day of May, Anno Domini one thousand nine hundred and one;

Nor the act, entitled "An act defining boiled or process butter; designating the name by which it shall be known; providing for the licensing of manufacturers and dealers therein, and regulating the sale and labeling of the same so as to prevent fraud and deception in its sale; providing punishment for violations of this act, the methods of procedure for its enforcement, and certain matters of evidence in such procedure," approved the tenth day of July, Anno Domni one thousand nine hundred and one;

Nor the act, entitled "An act to prohibit the selling, shipping, consigning, offering for sale, exposing for sale, or having in possession with intent to sell, as fresh, any meat, poultry, game fish or shellfish which contains any substance or article possessing a preservative or coloring character or action; making the same a misdemeanor, and to prescribe penalties and punishment for violations, and the means and the methods of procedure for the enforcement thereof," approved the twenty-eighth day of March, Anno Domini one thousand nine hundred and five:

Nor the act, entitled "An act providing for the regulation of the manufacture and sale of distilled and fermented vinegars; prescribing their standard to prevent the adulteration of the same, providing for the enforcement thereof, and punishment for the violation of the same," approved the eighteenth day of June, Anno Domini one thousand eight hundred and ninety-seven;

Nor the amendment thereto approved the twenty-first day of May, Anno Domini one thousand nine hundred and one, entitled "An act to amend the first and second sections of an act, entitled 'An act providing for the regulation of the manufacture and sale of distilled and fermented vinegars; prescribing their standard to prevent the adulteration of the same; providing for the enforcement thereof, and the punishment for the violation of the same,' approved the eighteenth day of June, Anno Domini one thousand eight hundred and ninety-seven, so as to provide that vinegar made wholly from grapes, apples, or other fruits shall not be required to contain an acidity of four per centum."

Nor the act, entitled "An act to prevent fraud and deception in the manufacture and sale of cheese, and defining what shall constitute the various grades of cheese; providing rules and regulations for marking and branding the same; providing for the enforcement of this act; prescribing penalties for its violation," approved the twenty-third day of June, Anno Domini one thousand eight hundred and ninety-seven;

And the amendment thereto, approved the second day of May, Anno Doimni one thousand nine hundred and one, entitled "An act to amend section two of an act, entitled 'An act to prevent fraud and deception in the manufacture and sale of cheese, and defining what shall constitute the various grades of cheese; providing rules and regulations for marking and branding the same; providing for the enforcement of this act; prescribing penalties for its violation,' approved the twenty-third day of June, Anno Domini one thousand eight hundred and ninety-seven;"

Nor the act, entitled "An act regulating the manufacture or sale of fruit syrups; providing for the enforcement thereof; and to repeal an act, entitled 'An act relative to adulteration of natural fruit juice, and providing penalties for violations thereof,' approved the second day of May, Anno Domini one thousand nine hundred and one," approved the twenty-sixth day of April, Anno Domini one thousand nine hundred and five:—

All of which acts shall remain in full force.

Approved—The 13th day of May, A. D. 1909.

MILK AND CREAM ACT.

AN ACT

Relating to milk: providing for the protection of the public health, and the prevention of fraud and deception, by regulating the sale of milk, skimmed milk and cream; providing penalties for the violation thereof; and providing for the enforcement thereof.

Section 1. Be it enacted, &c., That it shall be unlawful for any person, firm or corporate body, by himself, herself, itself or themselves, or by his, her, its or their agents, servants or employes to sell, offer for sale, expose for sale, or have in possession with intent to sell, milk which contains any added water, or milk which has had the butter-fat or any portion thereof removed therefrom, or milk to which has been added any substance for the purpose of increasing its consistency or thickness, or milk which contains less than three and one-quarter (3¼) per centum of butter-fat and less than twelve (12) per centum of milk solids: Provided, however, That skimmed milk, when clean and wholesome, may be sold, if sold as skimmed milk.

Section 2. That it shall be unlawful for any person, firm or corporate body, by himself, herself, itself or themselves, or by his, her, its or their agents, servants, or employes, to sell, offer for sale, expose for sale, or have in possession with intent to sell, cream which contains or is mixed with any added condensed or evaporated milk or cream, or cream to which has been added any substance for the purpose of increasing its consistency or thickness, or cream which contains less than eighteen (18) per centum of butter-fat: Provided, That cream, when it contains or is mixed with any added condensed or evaporated milk or cream, may be sold, if the vessel or container in which such cream is sold is plainly labeled, stating the fact that such cream contains or is mixed with added condensed or evaporated milk or cream, and the amount thereof.

Section 3. That any person who shall violate any of the provisions of this act shall be guilty of a misdemeanor, and upon conviction thereof shall be sentenced to pay a fine of not less than twenty-five (25) dollars, nor more than fifty (50) dollars, or imprisonment for not less than thirty (30) days, nor more than ninety (90) days, or either or both, at the discretion of the court.

Section 4. That the Dairy and Food Commissioner shall be charged with the enforcement of the provisions of this act.

Section 5. That all fines and penalties imposed and recovered for the violation of any of the provisions of this act shall be paid to the Dairy and Food Commissioner, or his agent, and when so collected and paid shall thereafter be, by the Dairy and Food Commissioner, paid into the State Treasury, for the use of the Commonwealth.

Section 6. This act shall not apply to nor in any way affect the act, entitled "An act to prohibit the adulteration or coloring of milk and cream by the addition of so-called preservatives or coloring matter, and to provide for the enforcement of the same," approved the tenth day of June, Anno Domini one thousand eight hundred and ninety-seven, and the amendment thereto, approved the nineteenth day of April, Anno Domini one thousand nine hundred and one, entitled "An act to amend the first section of an act, entitled 'An act to prohibit the adulteration or coloring of milk and cream by the addition of so-called preservatives or coloring matter, and to provide for the enforcement of the same,' approved the tenth day of June, Anno Domini one thousand eight hundred and ninety-seven."—which act shall remain in full force; but all other acts or parts of acts inconsistent with the provisions of this act be and the same are hereby repealed.

Approved—The 8th day of June, A. D. 1911.

SAUSAGE ACT.

AN ACT

Providing for the protection of the public health and the prevention of fraud and deception, by prohibiting the sale, the offering for sale or exposing for sale, or the having in possession with intent to sell, of adulterated or deleterious sausage; defining sausage; and prescribing the penalty for the violation thereof.

Section 1. Be it enacted, &c., That it shall be unlawful for any person or persons, by himself, herself or themselves, or by his, her or their agents, servants or employes, to sell, offer for sale, expose for sale, or have in possession with intent to sell, sausage that is adulterated within the meaning of this act.

Section 2. Defining sausage. That, for the purpose of the act, sausage or sausage-meat shall be held to be a comminuted meat from neat cattle or swine, or a mixture of such meats, either fresh, salted, pickled or smoked, with added salt and spices, and with or without the addition of edible animal fats, blood and sugar, or subsequent smoking. It shall contain no larger amount of water than the meats from which it is prepared contain when in their fresh condition.

Section 3. That for the purpose of this act, sausage shall be deemed to be adulterated—

First. If it contains added water in excess of the quantity required to bring the amount up to that which the meats from which it is prepared contain immediately after slaughter.

Second. If it contains any cereal or vegetable flour.

Third. If it contains any coal-tar dye, boric acid or borates, sulphites, sulphur dioxide, sulphurous acid, or any other substance injurious or deleterious to health.

Fourth. If it contains any diseased, contaminated, filthy or decomposed substance; or is manufactured, in whole or in part, from a diseased, contaminated, filthy or decomposed substance, or a substance produced, stored, transported or kept in a way or manner that would render the article diseased, contaminated or unwholesome; or if it is any product of a diseased animal, or the product of any animal which has died otherwise than by slaughter.

Section 4. That any persons who shall violate any of the provisions of this act shall be guilty of a misdemeanor, and upon conviction thereof shall be sentenced to pay a fine of not less than one hundred ($100) dollars, nor more than two hundred ($200) dollars, or to undergo an imprisonment of not less than thirty (30) days, nor more than sixty (60) days, or both or either, at the discretion of the court.

Section 5. That the Dairy and Food Commissioner shall be charged with the enforcement of the provisions of this act.

Section 6. That all fines and penalties imposed and recovered for the violation of any of the provisions of this act shall be paid to the Dairy and Food Commissioner, or his agent, and when so collected and paid shall thereafter be by the Dairy and Food Commissioner paid into the State Treasury, for the use of the Commonwealth.

Approved—The 6th day of April, A. D. 1911.

NON-ALCOHOLIC DRINKS ACT.

AN ACT

Relating to non-alcoholic drinks: defining the same; and prohibiting the manufacture, sale, offering for sale, exposing for sale, or having in possession with intent to sell, of any adulterated or misbranded non-alcoholic drinks: and providing penalties for the violation thereof, and providing for the enforcement thereof.

Section 1. Be it enacted, &c., That it shall be unlawful for any person, firm, or corporate body, by himself, herself, itself or themselves, or by his, her, its or their agents, servants, or employes, to manufacture, sell, offer for sale, expose for sale, or have in possession with intent to sell, any article of non-alcoholic drink which is adulterated or misbranded, within the meaning of this act.

Section 2. That the term "non-alcoholic drink," as used herein, shall include carbonated beverages of all flavors, sarsaparilla, ginger ale, soda water of all flavors, lemonade, orangeade, root beer, grape juice, and all other non-intoxicating drinks.

Section 3. A non-alcoholic drink shall be deemed to be adulterated, within the meaning of this act, if it contains any added boric acid or borates, salicylic acid or salicylates, formaldehyde, sulphurous acid or sulphites, hydrofluoric acid or fluorides, fluoborates, fluosilicates, or other fluorine compounds, dulcin, glucin, saccharin, betanapthol, hydronapthol, abrastol, asaprol, oxides of nitrogen, nitrous acid or nitrates, compounds of copper, pyroligneous acid, or other added substance deleterious to health.

Section 4. That, for the purpose of this act, a non-alcoholic drink shall be deemed to be misbranded,—

First. If it be an imitation of, or offered for sale under, the distinctive name of another article, or if it is colored or flavored in imitation of the genuine color or flavor of another substance.

Second. If it be labeled or branded or tagged so as to deceive or mislead the purchaser.

Third. If the bottle or receptacle containing it, or its label, shall bear any statement, design, or device, regarding the ingredients or the substances contained therein, which statement, design, or device shall be false or misleading in any particular: Provided, That any non-alcoholic drink which does not contain any added poisonous or deleterious ingredients shall not be deemed to be adulterated or misbranded under the following conditions:—

A. In the case of mixtures or compounds which may be now, or from time to time hereafter, known as non-alcoholic beverages under their own distinctive names, and not an imitation of, or offered for sale under, the name of another article.

B. In the case of non-alcoholic beverages which are labeled, branded, or tagged so as to plainly indicate that they are compounds, imitations, or blends, and the word "Compound," "Imitation," or "Blend," as the case may be, is plainly stated on the container in which it is offered for sale: Provided, That the term "blend," as used herein, shall be construed to mean a mixture of like substances, not excluding harmless coloring or flavoring ingredients not prohibited by this act, and used for the purpose of coloring or flavoring only.

Section 5. Any person who shall violate any of the provisions of this act shall be guilty of a misdemeanor, and, upon conviction thereof, shall be sentenced to pay a fine of not less than twenty-five ($25) dollars, nor more than one hundred ($100) dollars.

Section 6. The Dairy and Food Commissioner shall be charged with the enforcement of the provisions of this act.

Section 7. All fines and penalties imposed and recovered for any violation of any of the provisions of this act shall be paid to the Dairy and Food Commissioner or his agent, and, when so collected and paid, shall thereafter be, by the Dairy and Food Commissioner, paid into the State Treasury, for the use of the Commonwealth.

Section 8. This act shall not apply to, nor in any way affect, the act, entitled "An act to prohibit the adulteration or coloring of milk or cream by the addition of so-called preservatives or coloring matter, and to provide for the enforcement of the same," approved the tenth day of June, Anno Domini one thousand eight hundred and ninety-seven; and the amendments thereto, approved the nineteenth day of April, Anno Domini one thousand nine hundred and one, entitled "An act to amend the first section of an act, entitled 'An act to prohibit the adulteration or coloring of milk and cream by the addition of so-called preservatives or coloring matter, and to provide for the enforcement of the same,' approved the tenth day of June, Anno Domini one thousand eight hundred and ninety-seven;" nor the act, entitled "An act regulating the manufacture or sale of fruit-syrups, providing for the enforcement thereof, and to repeal an act, entitled 'An act relative to adulteration of natural fruit juice, and providing penalties for the violations thereof,' approved the second day of May, Anno Domini one thousand nine hundred and one," approved the twenty-sixth day of April, Anno Domini one thousand nine hundred and five,—which acts shall remain in full force.

Approved—The 11th day of March, A. D. 1909.

ICE CREAM ACT.

AN ACT

For the protection of the public health; and to prevent fraud and deception in the manufacture, sale, offering for sale, exposing for sale, and having in possession with intent to sell, of adulterated or deleterious ice cream; fixing a standard of butter-fat for ice cream; providing penalties for the violation thereof, and providing for the enforcement thereof.

Section 1. Be it enacted, &c., That no person, firm, or corporate body, by himself, herself, itself or themselves, or by his, her or their agents, servants, or employes, shall sell, offer for sale, expose for sale, or have in possession with intent to sell, ice-cream adulterated within the meaning of this act.

Section 2. Ice cream shall be deemed to be adulterated, within the meaning of this act,—

First. If it shall contain boric acid, formaldehyde, saccharin, or any other added substance or compound that is deleterious to health.

Second. If it shall contain salts of copper, iron oxide, ochres, or any coloring substance deleterious to health: Provided, That this paragraph shall not be construed to prohibit the use of harmless coloring matter in ice cream, when not used for fradulent purposes.

Third. If it shall contain any deleterious flavoring matter, or flavoring matter not true to name.

Fourth. If it be an imitation of, or offered for sale under, the name of another article.

Section 3. Nothing in this act shall be construed to prohibit the use of fresh eggs, and not exceeding one-half of one per centum of pure gelatin, gum tragacanth, or other vegetable gums.

Section 4. No ice cream shall be sold within the State containing less than eight (8) per centum butter-fat, except where fruit or nuts are used for the purpose of flavoring, when it shall not contain less than six (6) per centum butter-fat.

Section 5. It shall not be lawful for any person, firm or corporate body to sell, offer for sale, expose for sale, or have in possession with intent to sell, any ice cream in any container which is falsely labeled or branded as to the name of the manufacturer thereof; or to misrepresent, in any way, the place of manufacture of ice cream or the manufacture thereof.

Section 6. Any person, firm, or corporate body who shall violate any of the provisions of this act shall be guilty of a misdemeanor, and, upon conviction thereof, shall be sentenced to pay a fine of not less than twenty-five (25) dollars, nor more than fifty (50) dollars.

Section 7. The Dairy and Food Commissioner shall be charged with the enforcement of the provisions of this act.

Section 8. All fines and penalties imposed and recovered for the violation of any of the provisions of this act shall be paid to the Dairy and Food Commissioner or his agent, and, when so collected and paid, shall thereafter be, by the Dairy and Food Commissioner, paid into the State Treasury for the use of the Commonwealth.

Approved—The 24th day of March, A. D. 1909.

FRESH EGGS ACT.

AN ACT

For the protection of the public health, by prohibiting the sale, offering for sale, exposing for sale, or having in possession with intent to sell, of eggs unfit for food, as therein defined, and prohibiting the use of such eggs in the preparation of food products; providing penalties for the violation thereof, and providing for the enforcement thereof.

Section 1. Be it enacted, &c., That it shall be unlawful for any person, firm, or corporate body, by himself, herself, itself or themselves, or by his, her, its or their agents, servants or employes, to sell, offer for sale expose for sale, or have in possession with intent to sell, eggs that are unfit for food, within the meaning of this act.

Section 2. This act shall apply to eggs that, either before or after removal from the shell, are wholly or partly decayed or decomposed, and to eggs in the fluid state, any portion of which are wholly or partly decayed or decomposed, or that are mixed with parts of eggs that are derived from eggs that are wholly or partly decayed or decomposed. This act shall also apply to frozen masses or broken eggs, if the mass contains eggs that are wholly or partly decayed or decomposed, or that are mixed with parts of eggs that have been taken from eggs that were wholly or partly decayed or decomposed.

Section 3. That it shall be unlawful for any person, firm, or corporate body, by himself, herself, itself or themselves, or by his, her, its or their agents, servants, or employes, to use eggs that are either wholly or partly decayed or decomposed, in the preparation of food products: And provided further, That there shall be no delivery, sale, purchase, or acceptance of wholly or partly decayed or decomposed eggs in or at any establishment where food products are prepared or manufactured.

Section 4. That any person who shall violate any of the provisions of this act shall be guilty of a misdemeanor, and, upon conviction thereof, shall be sentenced to pay a fine of not less than two hundred ($200) dollars, nor more than one thousand ($1,000) dollars, or to undergo an imprisonment of not less than three (3) months, nor more than nine (9) months, or both or either, at the discretion of the court.

Section 5. That the Dairy and Food Commissioner shall be charged with the enforcement of the provisions of this act.

Section 6. That all fines and penalties imposed and recovered for the violation of any of the provisions of this act shall be paid to the Dairy and Food Commissioner, or his agent, and, when so collected and paid, shall thereafter be, by the Dairy and Food Commissioner, paid into the State Treasury, for the use of the Commonwealth.

Approved—The 11th day of March, A. D. 1909.

LARD ACT.

AN ACT

To protect the public health, and prevent fraud and deception in the manufacture or sale of lard, lard substitutes, imitation lard, and lard compounds; providing penalties for the violation thereof, and providing for the enforcement thereof.

Section 1. Be it enacted, &c., That no person, firm, or corporate body, by himself, itself or themselves, or by his, her, its or their agents, servants or employes, shall within the State, manufacture, sell, offer for sale, expose for sale, or have in possession with intent to sell, lard which contains any ingredients other than the pure fat of swine, except as hereinafter provided.

Section 2. Imitation lard and lard substitutes, not containing any lard, may be made and sold, when offered for sale and sold under the distinctive trade-name thereof: Provided, however, That if said imitation lard or lard substitute is offered for sale or sold from a broken package, then the vessel, receptacle, or wrapper receiving the same, at the time of every sale, shall be plainly labeled or marked on the outside thereof, in letters at least one-half inch in length and plainly exposed to view, with the word "Imitation Lard" or "Lard Substitute," or the distinctive trade-name of the said article or substance: And provided further, That the said imitation lard or lard substitute shall not be composed of, or contain any article, substance, or ingredients deleterious to health.

Compounds composed of not less than fifty (50) per centum of pure lard, and other substance or substances not deleterious to health, may be made and sold, if the vessel, receptacle, or other wrapper receiving the same at the time of every sale thereof, is plainly marked or labeled on the outside thereof, in letters at least one-half inch in length and plainly exposed to view, with the words "Compound Lard."

Section 3. Any person. firm, or corporate body who shall violate any of the provisions of this act shall be guilty of a misdemeanor, and, upon conviction thereof, shall be sentenced to pay a fine of not less than fifty ($50) dollars, nor more than one hundred ($100) dollars.

Section 4. The Dairy and Food Commissioner shall be charged with the enforcement of the provisions of this act.

Section 5. All fines and penalties imposed and recovered for the violation of any of the provisions of this act shall be paid to the Dairy and Food Commissioner or his agent, and, when so collected and paid, shall thereafter be, by the Dairy and Food Commissioner, paid into the State Treasury, for the use of the Commonwealth.

Section 6. All acts or parts of acts inconsistent with the provisions of this act be and the same are hereby repealed.

Approved—The 11th day of March, A. D. 1909.

ADULTERATION OR COLORING OF MILK AND CREAM.

AN ACT

To prohibit the adulteration or coloring of milk and cream by the addition of so-called preservatives or coloring matter, and to provide for the enforcement of the same.

Section 1. Be it enacted, &c., That if any person, firm or corporate body, by himself, herself, or themselves, or by his, her or their agents or servants, shall offer for sale, expose for sale, sell, or have in possession with intent to sell, for human consumption, milk or cream to which has been added boracic acid salt, boracic acid, salicylic acid, salicylate of soda, formaline, formaldehyde, sodium flouride, sodium benzoate, or any other compound or substance for the purpose of preserving or coloring the same, shall be deemed guilty of a misdemeanor, and upon conviction thereof in the court of quarter sessions of the proper county, shall be sentenced to pay a fine of not less than fifty nor more than one hundred dollars, or to undergo an imprisonment not exceeding sixty days, or both, at the discretion of the court.—Amendment of 19th of April, 1901.

Section 2. The agent of the Department of Agriculture, known as the Dairy and Food Commissioner, shall be charged with the enforcement of all the provisions of this act, and shall have all the power to enforce this act that is given him to enforce the provisions of the act by which he receives his appointment.

Section 3. All penalties and costs for the violation of the provisions of this act shall be paid to the Dairy and Food Commissioner or his agent, and by him paid into the State Treasury, to be kept as a fund, separate and apart, for the use of the Department of Agriculture for the enforcement of this act, and to be drawn out upon the warrant signed by the Secretary of Agriculture and the Auditor General.

Section 4. All acts or parts of acts inconsistent with the provisions of this act are hereby repealed.

Approved—The 10th day of June, 1897.

VINEGAR ACT.

AN ACT

Providing for the regulation of the manufacture and sale of distilled and fermented vinegars, prescribing their standard, to prevent the adulteration of the same, providing for the enforcement thereof, and punishment for the violation of the same.

Section 1. Be it enacted, &c., That from and after the passage of this act no person, firm or corporate body shall manufacture for sale, offer for sale or expose for sale, sell or deliver, or have in his, her or their possession with intent to sell or deliver, any vinegar not in compliance with the provisions of this act. No vinegar shall be sold or exposed for sale as apple or cider vinegar which is not the legitimate product of pure apple juice, or vinegar not made exclusively of said apple cider, or vinegar in which foreign substances, drugs or acids shall have been introduced, as may appear upon proper test; no vinegar shall be branded fruit vinegar unless the same be made wholly from grapes, apples or other fruits.—Amendment of May 21, 1901.

Section 2. All vinegar made by fermentation and oxidation without the intervention of distillation, shall be branded "fermented vinegar," with the name of the fruit or substance from which the same is made. And all vinegar made wholly or in part from distilled liquor shall be branded as "distilled vinegar," and all such distilled vinger shall be free from coloring matter, added before, during or after distillation, and from color other than that imparted to it by the process of distillation, and shall contain not less than four per centum, by weight, of absolute acetic acid. And all vinegar shall be made wholly from the fruit or grain from which it is represented to be made, and shall contain no foreign substance: Provided, That this shall not be construed to prohibit the use of such an amount of spices as are necessary for flavoring, provided such spices do not color the vinegar.—Amendment of 21st May, 1901.

Section 3. No person, firm or corporate body shall manufacture for sale, offer for sale, or have in his, her or their possession with intent to sell or expose for sale any vinegar found upon proper test to contain any preparation of lead, copper, sulphuric or other mineral acid, or other ingredients injurious to health. And all packages containing vinegar shall be plainly and distinctly marked on each head of the cask, barrel or keg containing such vinegar, or if sold in other packages, each package shall be plainly and distinctly marked with the name and residence of the manufacturer, together with the brand required in section two thereof.

Section 4. Every person, firm or corporate body who shall violate any of the provisions of this act shall, for every such offense, forfeit and pay not less than fifty dollars nor more than one hundred dollars, which shall be recoverable, with costs, including expense of inspection and analysis, by any person suing in the name of the Commonwealth as debts of like amount are by law recoverable: Provided, That the Department of Agriculture, through its officer known as the Dairy and Food Commissioner, together with the deputies, agents and assistants, shall be charged with the enforcement of this act, and shall have full access to all places of business, factories, mills, buildings, carriages, cars, vessels, barrels, tanks and packages of whatever kind used in the manufacture and transportation and sale of any vinegar, or of any adulteration or imitation thereof, or any package in which vinegar is mixed with articles of food. They shall also have power and authority to open any package, barrel or vessel containing any vinegar, or any adulteration or imitation thereof, which may be manufactured, sold or exposed for sale, and they shall also have full power and authority to take the samples therefrom for analysis upon tendering the value of said samples. And all charges, accounts and expenses of the Department for the enforcement of this act, through the said Commissioner and his deputies, agents, assistants, chemists, and counsel employed by him, in carrying out the provisions of this act, shall be paid by the Treasurer of the State in the same manner as other accounts and expenses of the said Department are paid. And all penalties and costs for the violation of the provisions of this act shall be paid to the said Dairy and Food Commissioner, or his agents, and by him immediately covered into the State Treasury, to be kept as a fund for the use of the Department, and to be drawn out upon the warrant signed by the Secretary of Agriculture and the Auditor General.

Section 5. Every person who violates any of the provisions of this act shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not less than fifty dollars, nor more than one hundred dollars, or by imprisonment in the county jail for not less than ten nor more than thirty days, or both fine and imprisonment for the first offense, and a fine of one hundred dollars and imprisonment for thirty days for every subsequent offense: Provided, That all fines and costs, including the expense of inspection and analysis imposed under this action, shall be covered into the State Treasury as provided by section four of this act, and all vinegar sold or offered for sale in violation of the provisions of this act shall be subject to forfeiture and spoliation.

Section 6. Magistrates and justices of the peace throughout this Commonwealth shall have jurisdiction to hear and determine actions arising for violations of the provisions of this act, and to hold for court, or impose the penalties provided therein, subject to appeal as the law shall direct.

Section 7. All acts or parts of acts inconsistent with the provisions of this act are hereby repealed.

Approved—The 18th day of June, A. D. 1897.

CHEESE ACT.

AN ACT

To prevent fraud and deception in the manufacture and sale of cheese, and defining what shall constitute the various grades of cheese, providing rules and regulations for marking and branding the same, providing for the enforcement of this act, prescribing penalties for its violation.

Section 1. Be it enacted, &c., That no person, firm or corporate body shall manufacture, sell, or offer for sale or have in his or their possession with intent to sell, any cheese not the legitimate product of pure, unadulterated milk or cream, or any cheese into which any foreign fats or substances have been introduced as may appear upon proper test.

Section 2. All cheese manufactured or sold within this Commonwealth shall be divided into five grades, and shall be branded or stenciled in ordinary bold-faced capital letters, not less than one-half inch in height, on one side of each cheese, and upon one side of the box or case containing the cheese, the manufacturer's name and postoffice address, and the words "Full cream," "Three-fourths Cream," "One-half Cream," "One-fourth Cream" and "Skimmed Cheese." All cheese branded "Full Cream," shall contain not less than thirty-two per centum of butter-fat, as may appear upon proper test. All cheese branded "Three-fourth Cream" shall contain not less than twenty-four per centum of butter-fat, as may appear upon proper test. All cheese branded "One-half Cream" shall contain not less than sixteen per centum of butter-fat, as may appear upon proper test. All cheese branded "One-fourth Cream" shall contain not less than eight per centum of butter-fat, as may appear upon proper test. All cheese containing less than eight per centum of butter-fat, as may appear upon proper test, shall be branded "Skimmed Cheese:" Provided, however, That all full cream cheese sold, shipped or consigned to dealers outside of the Commonwealth of Pennsylvania may be branded, or stenciled, or not, as required by this act, at the option of the manufacturer.—Amendment of May 2, 1901.

Section 3. Every person, firm or corporation who shall violate any of the provisions of this act shall, for every such offense, forfeit and pay the sum of not less than fifty dollars, nor more than one hundred dollars, together with all charges and expenses for inspection and analysis connected therewith, by any person suing therefor in the name of the Commonwealth, as debts of like amount are by law recoverable; and justices of the peace and aldermen throughout this Commonwealth shall have jurisdiction to hear and determine all actions arising under the provisions of this act, and all cheese not in accordance with this act shall be subject to forfeiture and spoliation: Provided, That the Department of Agriculture, through its officer, known as the Dairy and Food Commissioner, together with his deputies, agents and assistants, shall be charged with the enforcement of the provisions of this act, and shall have authority to enter any building or factory where the same is sold or manufactured or exposed for sale, and shall have the right to take samples sufficient for analysis, upon tendering the value thereof. All fines and penalties, including also all charges for inspection and analysis, shall be paid to the Dairy and Food Commissioner, his deputies, agents or assistants, and by him immediately covered into the State Treasury, and so much of said fund as may be necessary for the enforcement of this act shall be drawn out upon warrants signed by the Secretary of Agriculture and Auditor General: Provided, That the provisions of this act shall not be construed to apply to such cheese as is known as "fancy" cheese and is under five pounds in weight, each; or to what is known as cottage cheese or pot cheese, and do not contain anything injurious to health.

Section 4. This act shall take affect sixty days after its approval by the Governor of the Commonwealth.

Approved—The 23d day of June, A. D. 1897.

FRUIT SYRUP ACT.

AN ACT

Regulating the manufacture or sale of fruit syrups, providing for the enforcement thereof, and to repeal an act, entitled "An act relative to adulteration of natural fruit juice, and providing penalties for violations thereof," approved the second day of May, Anno Domini one thousand nine hundred and one.

Section 1. Be it enacted, &c., That any person, firm, or corporate body who shall, by himself, herself or themselves, or by his, her or their agents or servants, manufacture, sell, ship, consign, offer for sale or expose for sale, or have in possession with intent to sell, any fruit-syrup which contains formaldehyde, sulphurous acid or sulphites, boric acid or borates, salicylic acid or salicylates, saccharin, dulcin, glucin, betanapthol, abrastol, asaprol, fluorides, fluoborates, fluosilicates or other fluorine compounds; also any coal tar dyes, sulphate of copper, or any other coloring matter injurious to health, or any preservatives or their compounds injurious to health, shall be deemed guilty of a misdemeanor.

Section 2. Every person, firm or corporation, and every officer, agent, servant or employe of such person, firm or corporation, who violates any of the provisions of this act shall be deemed guilty of a misdemeanor, and, upon conviction thereof in the court of quarter sessions of the proper county, shall be sentenced to pay a fine of not less than sixty nor more than one hundred dollars, with the costs, or to undergo an imprisonment not exceeding sixty days, or both, at the discretion of the court.

Section 3. It shall be the duty of the Dairy and Food Commissioner to enforce the provisions of this act, for which purpose he shall have the same power which is given to enforce the provisions of the act authorizing his appointment.

Section 4. All penalties or fines which may be recovered in any proceeding to enforce the provisions of this act shall be paid to the Dairy and Food Commissioner, or his agent, and by him paid into the State Treasury for the use of the Commonwealth.

Section 5. The act, entitled "An act relative to adulteration of natural fruit juice, and providing penalties for violations thereof," approved the second day of May, Anno Domini one thousand nine hundred and one, be and the same is hereby repealed.

Approved—The 26th day of April, A. D. 1905.

OLEOMARGARINE ACT.

AN ACT

To prohibit the manufacture and sale of oleomargarine, butterine, and other similar products, when colored in imitation of yellow butter; to provide for license fees to be paid by manufacturers, wholesale and retail dealers, and by proprietors of hotels, restaurants, dining rooms and boarding houses; for the manufacture and sale of oleomargarine, butterine, or other similar products, not colored in imitation of yellow butter; and to regulate the manufacture and sale of oleomargarine, butterine or other similar products, not colored in imitation of yellow butter, and to prevent and punish fraud and deception in such manufacture and sale as an imitation butter; and to prescribe penalties and punishment for violations of this act, and the means and the method of procedure for its enforcement, and regulate certain matters of evidence in such procedure.

Section 1. Be it enacted, &c., That no person, firm, or corporation shall, by himself, herself or themselves, or by his, her or their agent or servant, nor shall any officer, agent, servant or employe of any person, firm or corporation, manufacture, sell, ship, consign, offer for sale, expose for sale, or have in possession with intent to sell, oleomargarine, butterine, or any similar substance, article, product or compound, made wholly or partly out of any fats, oils or oleaginous substance, or compound thereof, not produced from pure, unadulterated milk, or cream from the same, without the admixture or addition of any fats foreign to the said milk or cream, and which shall be in imitation of yellow butter, produced from pure, unadulterated milk, or cream of the same, with or without coloring matter, unless such person, firm or corporation shall have first obtained a license and paid a license fee, as hereinafter provided; nor unless the said article, product or compound, so manufactured, shipped, consigned, offered for sale, exposed for sale, or had in possession with intent to sell, shall be made and kept free from all coloration or ingredients causing it to look like yellow butter; nor unless the same shall be kept and presented in a separate and distinct form, and in such manner as will advise the purchaser and consumer of its real character; nor unless such person, firm or corporation shall in all other respects comply with and observe the provisions of this act.

Section 2. Every person, firm or corporation, and every agent of such person, firm or corporation, desiring to manufacture, sell or offer, or expose for sale, or have in possession with intent to sell, oleomargarine, butterine, or any similar substance, not made or colored in imitation of yellow butter, shall make application for a license so to do, in such form as shall be prescribed by the Department of Agriculture through its agent, the Dairy and Food Commissioner; which application, in addition to other matters which may be required to be stated therein by said Dairy and Food Commissioner, shall contain an accurate description of the place where the proposed business is intended to be carried on, and the name and style under which it is proposed to conduct the said business. If the said application is satisfactory to the said Dairy and Food Commissioner, and said name and style shall not, in the judgment of the Dairy and Food Commissioner, be calculated to deceive or mislead the public as to the real nature of the business so proposed to be carried on, he shall issue to the applicant or applicants a license, authorizing him, her or them to engage in the manufacture or sale of oleomargarine, or butterine, or any similar substance, which shall not contain any coloration or ingredient that causes it to resemble or be in imitation of yellow butter; for which said license the applicant or applicants shall first pay; if a manufacturer, the annual sum of one thousand dollars; if a wholesaler, the annual sum of five hundred dollars; and if a retailer, the annual sum of one hundred dollars; if a proprietor of a hotel, restaurant or dining room, the annual sum of fifty dollars; and if a proprietor of a boarding house, the annual sum of ten dollars; and the said license fee, when received by the Dairy and Food Commissioner or his agent, shall be by him immediately covered into the State Treasury. Such licenses shall not authorize the manufacture or sale, exposing for sale, or having in possession with intent to sell, oleomargarine, butterine or any similar substance, at any other place than that designated in the application and license; and the said license shall not authorize the manufacture, sale, exposing for sale, or having in possession with intent to sell, any oleomargarine, butterine or any similar substance, made or colored so as to resemble or be in imitation of yellow butter.

All licenses under this act shall expire on the thirty-first day of December of each year, but licenses may be granted to commence on the first day of any month for the remainder of a year, upon payment of a proportionate part of the annual license fee; such licenses may be transferred by the Dairy and Food Commissioner upon the application in writing of the person, firm or corporation to which the same has been granted: Provided, The transferee shall comply with the regulations made by the said Dairy and Food Commissioner in regard to the said transfer, and shall thereafter comply with the provisions of this act.

Wholesale dealers, within the meaning of this act, shall be all persons, firms and corporations who shall sell to dealers, and persons who shall buy to sell again, and all persons, firms and corporations who make sales in quantities of ten pounds and over, at any time; and retail dealers shall be all persons, firms and corporations who shall sell in quantities less than ten pounds.

Section 3. After obtaining the license required by this act, the person, firm or corporation obtaining the same shall, before beginning any business under this said license, hang up and display, in a conspicuous place, on the walls of the room or store in which the oleomargarine, butterine or other similar substance is manufactured, sold or exposed for sale, the license so obtained as aforesaid; and shall also procure from the Department of Agriculture, through the Dairy and Food Commissioner, a sign or signs, which in number, size and letter shall be as the Dairy and Food Commissioner shall direct, and which shall be uniform throughout the Commonwealth, clearly setting forth that he, she or they are engaged in the manufacture or sale of oleomargarine; which said sign or signs, when procured, shall be hung up in a conspicuous place or places on the walls of every room or store in which the oleomargarine, butterine or other similar substance is manufactured or sold. And in addition to such sign or signs, so hung up as aforesaid, every proprietor of a hotel, restaurant, dining room or boarding house, shall also have conspicuously placed, upon every counter or table at which food, meals or refreshments are served to customers, a placard plainly printed, in letters not less than one-half inch in length, stating that oleomargarine is used and served to customers.

Section 4. It shall be unlawful for any person, firm or corporation or any agent thereof to sell, or offer or expose for sale, or have in possession with intent to sell, any oleomargarine, butterine or similar substance, not in imitation of yellow butter, which is not marked and distinguished, on the outside of each tub, package or parcel thereof, in a conspicuous place, by a placard with the word "OLEOMARGARINE" printed thereon; such placard to be placed in a conspicuous position, in full view of the purchaser, and the said word "OLEOMARGARINE" on such placard shall be printed in plain, uncondensed, Gothic letters, not less than one inch long, and such placard shall not contain any other words thereon. And there shall also be displayed upon every open tub, package or parcel containing such oleomargarine, butterine or any similar substance, not in imitation of yellow butter, in the same manner, in a conspicuous position, a placard with the word "OLEOMARGARINE" printed thereon, in the same form as above described in this section; and when oleomargarine, butter or other similar substance, not in imitation of yellow butter, is sold from such tub or package, or otherwise, at retail, in print, roll or other form, before being delivered to the purchaser it shall be wrapped in wrappers, plainly stamped on the outside thereof with the word "OLEOMARGARINE," printed or stamped thereon in letters one-fourth inch square; and said wrapper shall also contain the name and address of the seller and the quantity sold, and no other words thereon, and the said word "OLEOMAR-

GARINE," so stamped or printed on the said wrapper, shall not be in any manner concealed, but shall be in plain view of the purchaser at the time of purchase.

Section 5. Every licensed manufacturer of oleomargarine, butterine or other similar product, not in imitation of yellow butter, and every licensed wholesale dealer therein, shall keep a book in which shall be entered accurately every sale and shipment of oleomargarine, butterine or other similar substance, not in imitation of yellow butter; giving the date of sale and shipment, the quantity, the person to whom sold and shipped, the place to which shipped, and the name of the transportation line by which shipped; which book shall always be open to the examination of the Dairy and Food Commissioner, his agents, attorneys and representatives. Every licensed retail dealer in oleomargarine, butterine or similar substance, not in imitation of yellow butter, shall keep an accurate account, in a book open to the examination of the Dairy and Food Commissioner, his agents, attorneys and representatives, in which shall be entered the date of the receipt of all purchases of oleomargarine, butterine or any similar substance, made by such retail dealer; stating therein where, when and from whom purchased, and the quantity; and the said books, so to be kept by manufacturers, wholesale and retail dealers, shall be in such form as the Dairy and Food Commissioner shall direct.

Section 6. Every person, firm or corporation, and every officer, agent, servant and employe of such person, firm or corporation, who shall manufacture, sell or offer, or expose for sale, or have in possession with intent to sell, oleomargarine, butterine or any similar substance, in violation of any of the provisions of this act; or who shall sell oleomargarine, butterine, or any similar substance, as or for butter; or who shall fail to keep a book, in accordance with the last preceding section; or who shall, in any other respects, violate any of the provisions of this act, shall for every such offense forfeit and pay the sum of one hundred dollars, which shall be recoverable, with the costs, including the expense of analysis, by any person suing in the name of the Commonwealth, as debts of like amount are by law recoverable; and justices of the peace and aldermen throughout this Commonwealth shall have jurisdiction to hear and determine all actions for recovery of said penalties, with the right to either party to appeal to the court of common pleas, as provided in existing laws in suits for penalties. And all penalties and costs imposed and recovered under the provisions of this act shall be paid to the Dairy and Food Commissioner, or his agents, and by him immediately covered into the State Treasury, to be paid out and used as hereinafter provided.

Section 7. In addition to the above penalty, every person, firm or corporation, and every officer, agent, servant or employe of such person, firm or corporation, who violates any of the provisions of this act shall also be guilty of a misdemeanor; and upon conviction thereof, shall be punished for the first offense by a fine of not less than one hundred dollars, nor more than five hundred dollars, or by imprisonment in the county jail for not more than three months, or both, at the discretion of the court; and upon conviction of any subsequent offense, shall be punished by a fine of not less than five hundred dollars, nor more than one thousand dollars, and by imprisonment in the county jail for not less than six months nor more than twelve months.

Section 8. In any proceeding under this act, either for the collection of a penalty or a prosecution for a misdemeanor, the certificate of the Dairy and Food Commissioner and the Secretary of Agriculture, under the seal of the Departemnt of Agriculture, shall be accepted by the justices of the peace, aldermen, and courts of record, as evidence of the granting of licenses to manufacture or sell oleomargarine or butterine, or of the fact that no such license has been granted to any particular person, firm or corporation.

Section 9. Whenever a suit for the collection of a penalty, under the provisions of this act, shall be appealed to any court of record, or whenever any prosecution for a misdemeanor on account of any violation of the provisions of this act has been returned to any court of quarter sessions, it shall be lawful for the Dairy and Food Commissioner, his agents or attorneys, in case the person or persons who have been sued for such penalty, or prosecuted for such misdemeanor, have since the commencement of such suit or prosecution again violated any of the provisions of this act, to apply to the court, having jurisdiction of such appeal or of such prosecution, or to any law judge thereof, by petition, setting forth the facts, and asking the said court to make an order commanding and restraining the person or persons, so sued or prosecuted as aforesaid, from further violating any of the provisions of this act until such time as the said suit for penalty or the said prosecution shall have been finally decided and determined; and thereupon the said court, or any law judge thereof, after such notice to such person or persons, so sued or prosecuted as aforesaid, as to the said court or judge may appear proper, and after inquiring into the facts alleged in said petition, shall, if satisfied that any violation of the provisions of this act have been committed by such person or persons since the commencment of said suit or prosecution, make an order commanding and restraining the said person or persons from any further violation of the provisions of this act until such time as the said suit or prosecution shall have been finally decided and determined; and in case, upon the final determination of said suit or prosecution, it shall appear that the said person or persons had incurred the liability to payment of the penalty for which suit had been so brought, or has been duly convicted of a misdemeanor in the prosecution so commenced as aforesaid, the said court or law judge thereof shall make the aforesaid order, restraining the said person or persons from further violation of the provisions of this act, continuing and permanent; and any violation by any person or persons of any such restraining order of such court or judge, whether the said restraining order shall be made during the pendency of a suit for penalty or of a prosecution as above stated, or after the final determination of such suit or prosecution in the manner aforesaid, shall be punishable as a contempt of the court so making the said order; and the said court is hereby authorized to take such steps for the punishment of such contempt as may by law be now taken for disregarding any injunction or other order of the courts of common pleas of this Commonwealth, sitting in equity and exercising equity jurisdiction. No security shall be required on the part of the petitioner for such restraining order, and the cost of the application and subsequent proceedings thereon shall be in the discretion of the court.

Section 10. It shall be the duty of every constable in any city, borough, ward or township of this Commonwealth, having knowledge of any violation of this act, or whenever requested so to do by the Dairy and Food Commissioner, his agent, or attorney, or by any citizen of this Commonwealth, to make report to the court of quarter sessions of the proper county, as part of his quarterly report and return to said court, of the name of every person, firm or corporation known by him to have violated any of the provisions of this act, or alleged by the person so giving notice as aforesaid to said constable to have violated any of the provisions of this act, and the names of all witnesses furnished to said constable, whose testimony it is alleged will sustain or prove the fact of such violation; and it shall be the duty of the judge of the said court to make inquiry of all constables, at the time of making their quarterly returns to the court of quarter sessions, as to whether they have knowledge, and whether notice has been given to them, respectively, of any violation of this act, in accordance with the terms of this section; and whenever such quarterly reports shall contain the name of any persons alleged to have violated the provisions of this act, together with the names of witnesses to prove such violations, as also the name of the person giving notice to the constable as aforesaid, the said court shall direct the district attorney to prepare an indictment against every person so named, and call and send the witnesses, whose names have been so returned, before the grand jury then sitting, in support of the said indictment; and if a true bill shall be returned by the grand jury, thereupon to issue summary process to bring the person so charged to answer the matters alleged in such prosecution, and thereupon proceed to trial as speedily as possible, according to the course of practice in the said court of quarter sessions.

Section 11. The Dairy and Food Commission shall be charged with the enforcement of all the provisions of this act; but any citizen of the Commonwealth, having knowledge or information of the violation of any of the provisions of this act, may, in the name of the Commonwealth, begin a suit for penalty or prosecution for misdemeanor in accordance with the provisions of this act, and may prosecute to final judgment any such suit or prosecution, giving notice in writing, however, to the Dairy and Food Commissioner of the commencement of such suit or prosecution, immediately upon commencement of the same, stating the nature of the proceeding and the magistrate before whom commenced; and shall, in like manner, report to the Dairy and Food Commissioner each successive step taken in such suit or prosecution; and such citizen shall, upon complying with the provisions of this section, be entitled to receive one-half of any penalty or fine which may be recovered in such proceeding and paid to the Dairy and Food Commissioner; and immediately upon the receipt and covering into the treasury of any such penalty or fine, recovered and paid in any proceeding commenced by a citizen as aforesaid, the Dairy and Food Commissioner shall pay the one-half thereof to the said citizen, so commencing said proceedings and complying with the provisions of this section. Such citizen shall also be entitled to recover from the defendant his witness fees and other legal costs as fixed by law, in said proceeding.

Section 12. The money paid into the Treasury under the provisions of this act shall constitute a special fund, for the use of the Department of Agriculture in enforcing this law; and may be drawn out upon warrants signed by the Secretary of Agriculture and approved by the Auditor General, subject, however, to the payment to any citizen commencing and sucessfully prosecuting a proceeding for any violation of this act, under the last preceding section, of one-half of the penalty or fine so recovered in such proceedings and paid into the State Treasury.

Section 13. The Dairy and Food Commissioner, his assistants, agents, experts, chemists, detectives and counsel, duly appointed by him for the purpose, shall have full access, egress and ingress to all places of business, factories, farms, buildings, carriages, cars, vessels and cans, used in the manufacture, transportation and sale of any dairy products, or of any adulteration or imitation thereof; and shall also have power and authority to open any package, can or vessel containing, or which may be supposed to contain, oleomargarine, butterine or other similar substance, or any adulteration or imitation of butter, which may be manufactured, sold or exposed for sale in violation of any of the provisions of this act, or of any act which may be hereafter enacted in relation to butter or the adulteration or imitation thereof; and they shall also have power to take from such package, can or vessel samples for analysis, upon paying or tendering the value of such samples.

Section 14. The Dairy and Food Commissioner shall publish a semi-annual bulletin, and distribute the same in the same manner as other bulletins of the Department of Agriculture are published and distributed; which semi-annual bulletin shall contain the name and address of every person, firm or corporation to whom a license has been issued for the manufacture or sale of oleomargarine, butterine or other similar substance; and, also a tabulated statement of all the actions, civil or criminal, which have been brought for the violation of this act, giving the name and address of the defendant, and the disposition of every such case.

Section 15. All acts or parts of acts inconsistent with this act are hereby repealed; but the repeal of said acts shall not in any way interfere with, or prevent the prosecution to final termination of, any actions, civil or criminal, now pending or which may hereafter be commenced, for any violation of said acts which has already been committed.

Approved—The 29th day of May, A. D. 1901.

RENOVATED OR PROCESS BUTTER ACT.

AN ACT

Defining boiled or process butter; designating the name by which it shall be known; providing for the licensing of manufacturers and dealers therein, and regulating the sale and labelling of the same so as to prevent fraud and deception in its sale; providing punishment for violations of this act, the methods of procedure for its enforcement, and certain matters of evidence in such procedure.

Section 1. Be it enacted, &c., That for the purposes of this act certain food products, usually known as "boiled" or "process" butter, produced by taking original packing stock and other butter and melting the same so that the butter oil can be drawn off, mixed with milk or skimmed milk or other material, and by emulsion or other process, produce butter, and butter produced by any similar process, and commonly known as "boiled" or "process" butter; and which "boiled" or "process" butter for the purpose of this act shall be known and designated as "renovated butter."

Section 2. Every person, firm or corporation, and every agent of such person, firm or corporation, who shall desire to engage in the business of manufacturing or selling "renovated butter," shall first make application to the Department of Agriculture for a license, authorizing him, her of them to engage in the manufacture or sale of "renovated butter," and such application for license shall be in such form as shall be prescribed by the Department of Agriculture through its agent, the Dairy and Food Commissioner; which application, in addition to other matters which may be required to be stated therein by the said Dairy and Food Commissioner, shall contain an accurate description of the place where the proposed business is intended to be carried on, and the name and style under which it is proposed to conduct the said business, which name and style shall not, in the judgment of the Dairy and Food Commissioner, be calculated to deceive or mislead the public as to the real nature of the business so proposed to be carried on; and if the said application is satisfactory to the said Dairy and Food Commissioner, he shall issue to the applicant or applicants a license, authorizng him, her or them to engage in the manufacture or sale of "Renovated Butter," for which said license the applicant or applicants shall first pay, annually, the following sum; if a manufacturer, the annual sum of one thousand ($1,000) dollars; if a wholesale dealer, the annual sum of five hundred ($500) dollars; if a retailer, the annual sum of one hundred ($100) dollars; if a restaurant keeper or dining room proprietor or a hotel proprietor, the annual sum of fifty ($50) dollars; if a boarding house keeper, the annual sum of ten ($10) dollars; and the said license fees, when received by the said Dairy and Food Commissioner or his agent, shall be by him immediately paid into the State Treasury. All licenses under this act shall expire the thirty-first day of December of each year, but licenses may be granted to begin on the first of any month, for the remainder of a year, upon the payment of a proportionate part of the annual license fee. Wholesale dealers, within the meaning of this act, shall be all persons, firms or corporations who shall sell to dealers, and persons who shall buy to sell again, and all persons, firms and corporations who make sales in quantities of ten pounds and over at any time. An agent of a manufacturer located outside of the State, and taking orders within this State for such "Renovated butter," to be delivered from the factory or from a storagehouse, or from one place of business to another within this State, shall be, within the meaning of this act, a wholesale dealer. And retail dealers shall be all persons, firms or corporations who sell in quantities of less than ten pounds. Every restaurant keeper or dining room proprietor or hotel proprietor or boarding house keeper, who furnishes "Renovated Butter" as part of the meal served to customers or guests shall be regarded as a dealer in "Renovated Butter." Such license may be transferred by the Dairy and Food Commissioner, upon the application in writing of the person, firm or corporation to which the same has been granted, provided the transferee shall comply with the provisions of this act and with the regulations made by the said Dairy and Food Commissioner in regard to the said transfer. Such license shall not authorize the manufacture or sale, exposing for sale or having in possession with intent to sell, "Renovated Butter" at any place other than that designated in the application and license. The license, procured as aforesaid, shall be hung up in a conspicuous place, in the place of business, room or store where such "Renovated Butter" is authorized to be sold.

Section 3. That no person, firm or corporation shall sell or offer or expose for sale, or have in his, her or their possession with intent to sell, any "Renovated Butter" from a wagon or other vehicle, or upon the public streets or roads, or from house to house.

Section 4. Every person, firm or corporation who shall obtain a license for the manufacture or sale of "Renovated Butter" shall also be required, before engaging in such manufacturing or sale, to procure from the Dairy and Food Commissioner a sign or signs, of such form, size and lettering as the Dairy and Food Commissioner shall determine, and which shall be uniform throughout the Commonwealth; which said sign or signs shall clearly set forth that he, she or they are engaged in the manufacture or sale of "Renovated Butter," and which sign or signs when procured shall be hung up in a conspicuous place or places, on the walls of each room or store or place of business in which "Renovated Butter" is manufactured or sold; and in addition to such sign or signs, so hung up as aforesaid, every restaurant keeper or dining room proprietor, or hotel proprietor or boarding house keeper, shall also have conspicuously placed upon every counter or table, at which food, meals or refreshments are served to customers, a placard, plainly printed in letters not less than one-half inch in length, stating that "Renovated Butter" is used and served to customers. Every person, firm or corporation who shall obtain a license as a manufacturer or wholesale dealer, for the manufacture or sale of renovated butter, shall also be required, before engaging in such manufacture or sale, to procure from the Dairy and Food Commissioner a stencil, of such form, size and lettering as the Dairy and Food Commissioner shall determine, and which shall be uniform throughout the Commonwealth; which said stencil shall designate the number of the said license and the name and address of the holder thereof; which said stencil shall be used by the manufacturer or wholesale dealer, and said stencil brand shall be placed on each and every package, before being sold by the manufacturer or wholesale dealer to the retailer. If any package of renovated butter shall be found in the possession of any manufacturer or wholesale dealer or retail dealer, without the said stencil brand being found thereon, such package shall be seized by the Dairy and Food Commissioner or by any of his agents, and said package shall be forfeited, and shall be sold by the Dairy and Food Commissioner or his agents, and the proceeds thereof paid to the State Treasurer, for the use of the Department of Agriculture.

Section 5. It shall be unlawful for any person, firm or corporation, or any agent thereof, to sell, or offer or expose for sale, or have in his, her or their possession with intent to sell, any "Renovated Butter," not marked and distinguished on the outside of each tub, package or parcel thereof, in a conspicuous place, by a placard with the words "Renovated Butter;" and such placard shall be printed in plain, uncondensed Gothic letters, not less than one-half inch long, and such placards shall not contain any other words, printing or device thereon; and also, upon every open tub, package or parcel, containing such "Renovated Butter," there shall be displayed in the same manner, in a conspicuous place, a placard with the words "Renovated Butter" printed thereon, in the same form as above described in this section, and when "Renovated Butter" is sold from such package, or otherwise, at retail, in print, or roll or other form, before being delivered to the purchaser it shall be wrapped in wrappers, plainly stamped on the outside thereof with the words "Renovated Butter," printed or stamped thereon in letters one-quarter of an inch square, and such wrapper shall contain no other words or printing thereon; and the said words "Renovated Butter," so stamped or printed on the said wrapper, shall not be in any manner concealed, but shall be in plain view of the purchaser at the time of purchase.

Section 6. Every person, firm or corporation who shall have obtained a license, and be engaged in the business of manufacturer or wholesale dealer in "Renovated Butter," shall keep a book, in which shall be entered accurately every sale and shipment, the quantity and person to whom sold and shipped, and place to which shipped, and the name of the transportation line by which shipped; which said book shall be always open to the inspection of the Dairy and Food Commissioner, or his agents, attorneys and representatives. Every retail dealer in "Renovated Butter" shall keep an accurate account, in a book open to the examination of the Dairy and Food Commissioner, his agents, attorneys and representatives, in which said book shall be entered the date of the receipt of all purchases of "Renovated Butter" made by such retail dealer, stating therein where and from whom purchased, and the quantity so purchased.

Section 7. Every person, firm or corporation, and every agent of such person, firm or corporation, who shall manufacture, sell or offer, or expose for sale, or have in his, her or their possession with intent to sell, "Renovated Butter," in violation of any of the provisions of this act, or who shall in any other respects violate any of the provisions of this act, shall for every offense forfeit and pay the sum of one hundred ($100) dollars, which shall be recoverable with the costs, including the expenses of the inspection and analysis, by any person suing in the name of the Commonwealth, as debts of like amount are by law recoverable; and justices of the peace and aldermen, throughout this Commonwealth, shall have jurisdiction to hear and determine all actions for recovery of penalties for violations of the provisions of this act, with the right of appeal in either party to the court of common pleas, as provided in existing laws in suits for penalties; and all penalties and costs, imposed and recovered under the provisions of this act, shall be paid to the Dairy and Food Commissioner or his agents, and by him immediately covered into the State Treasury, to be paid out and used as hereinafter provided.

Section 8. In addition to the above penalty, every person, firm or corporation, and every agent of such person, firm or corporation, who violates any of the provisions of this act shall be deemed guilty of a misdemeanor, and, upon conviction shall be punished first offense by a fine of not less than one hundred ($100) dollars, nor more than three hundred ($300) dollars, or by imprisonment in the county jail for not more than thirty (30) days, or both, at the discretion of the court; and for the second offense, by a fine of not less than three hundred ($300) dollars and not exceeding five hundred ($500) dollars, and imprisonment not exceeding (2) two years.

Section 9. In any proceedings under this act, either for the collection of a penalty or prosecution for a misdemeanor, the certificate of the Dairy and Food Commissioner and the Secretary of Agriculture, under the seal of the Department of Agriculture, shall be accepted by justices of the peace, aldermen and courts of record as evidence of the granting of a license to manufacture or sell "Renovated Butter," or of the fact that no such license has been granted to any particular person, firm or corporation.

Section 10. Whenever a suit for the collection of a penalty, under the provisions of this act, shall be appealed to any court of record, or whenever any prosecution for a misdemeanor, on account of any violation of the provisions of this act, has been returned to any court of quarter sessions, it shall be lawful for the Dairy and Food Commissioner, his agents or attorneys, in case the person or persons who have been sued for such penalty or prosecuted for such misdemeanor have, since the commencement of such suit or prosecution, again violated any of the provisions of this act, to apply to the court having jurisdiction of such appeal or of such prosecution, or to any law judge thereof, by petition setting forth the facts, and asking the said court to make an order commanding and restraining the person or persons, so sued or prosecuted as aforesaid, from further violating any of the provisions of this act until such time as the said suit for penalty or the said prosecution shall have been finally decided and determined; and thereupon the said court, or any law judge thereof, after such notice to such person or persons, so sued or prosecuted as aforesaid, as to the said court or judge may appear proper, and after inquiring into the facts alleged in said petition shall, if satisfied that any violation of the provisions of this act has been committed by such person or persons since the commencement of said suit or prosecution, make an order, commanding and restraining the said person or persons from any further violations of the provisions of this act, until such time as the said suit or prosecution shall have been finally decided and determined; and in case, upon the final determination of said suit or prosecution, it shall appear that the said person or persons had incurred the liability to payment of the penalty for which said suit had been so brought, or has been duly convicted of a misdemeanor in the prosecution so commenced as aforesaid, the said court or law judge thereof shall make the aforesaid order, restraining the said person or persons from the further violation of the provisions of this act, continuing and permanent; and any violation by any person or persons of any restraining order of such court or judge, whether the restraining order shall be made during the pendency of a suit for penalty, or a prosecution as above stated, or after the final determination of such suit or prosecution in the manner aforesaid, shall be punishable as a contempt of the court so making the said order. And the said court is hereby authorized to take such steps for the punishment of such contempt as may by law be now taken for disregarding any injunction or other order of the courts of common pleas of this Commonwealth sitting in equity and exercising equity jurisdiction. No security shall be required on the part of the petitioner for such restraining order, and the costs of the application and subsequent proceedings thereon shall be in the discretion of the court.

Section 11. It shall be the duty of every constable in any city, borough, ward or township of this Commonwealth, having knowledge of any violation of this act, or whenever requested so to do by the Dairy and Food Commissioner, his agents or attorneys, or by any citizen of this Commonwealth, to make report to the court of quarter sessions of the proper county, as part of his quarterly report and return to said court, of the name of every person, firm or corporation known by him to have violated any of the provisions of this act, or alleged by the person, so giving notice as aforesaid to said constable, to have violated any of the provisions of this act, and of the names of all witnesses, furnished to said constable, whose testimony it is alleged will sustain and prove the fact of such violation. And it shall be the duty of the judge of the said court to make inquiry of all constables, at the time of the making of their quarterly returns to the court of quarter sessions, as to whether they have knowledge, and whether notice has been given to them, respectively, of any violation of this act, in accordance with the terms of this section; and whenever such quarterly report shall contain the name of any person alleged to have violated the provisions of this act, together with the names of witnesses to prove such violation, and also the name of the person giving notice to the constable, as aforesaid, the said court shall direct the district attorney to prepare an indictment against every person so named, and call and send the witnesses, whose names have been so returned, before the grand jury then sitting, in support of the said indictment; and if a true bill shall be returned by the grand jury, thereupon to issue summary process to bring in the person so charged, to answer the matters alleged in such indictment, and thereupon proceed to trial as speedily as possible, according to the course of practice in the said court of quarter sessions.

Section 12. The Dairy and Food Commissioner shall be charged with the enforcement of all the provisions of this act; but any citizen of the Commonwealth, having knowledge or information of the violation of any of the provisions of this act, may, in the name of the Commonwealth, begin a suit for penalty or prosecution for misdemeanor, in accordance with the provisions of this act, and may prosecute to final judgment any suit or prosecution, giving notice in writing, however, to the Dairy and Food Commissioner of the commencement of such suit or prosecution immediately upon the commencement of the same, stating the nature of the proceeding and the magistrate before whom commenced, and shall in like manner report to the Dairy and Food Commissioner each successive step taken in such suit or prosecution; and such citizen shall, upon complying with the provisions of this section, be entitled to receive one-half of any penalty or fine which may be recovered in such proceeding and paid to the Dairy and Food Commissioner; and immediately upon the receipt and covering into the treasury of any such penalty or fine, recovered and paid in any proceeding commenced by a citizen, as aforesaid, the Dairy and Food Commissioner shall pay the one-half thereof to the said citizen, so commencing said proceeding and complying with the provisions of this section. Such citizen shall also be entitled to recover from the defendant his witness fees and other legal costs, as fixed by law, in said proceeding.

Section 13. The money paid into the treasury under the provisions of this act shall constitute a special fund, for the use of the Department of Agriculture in enforcing this law, and may be drawn out upon warrants signed by the Secretary of Agriculture and approved by the Auditor General; subject, however, to the payment to any citizen commencing and successfully prosecuting a proceeding for any violation of this act, under the last preceding section, of one-half of the penalty or fine so recovered in such proceeding and paid into the State Treasury.

Section 14. The Dairy and Food Commissioner, his assistants, agents, experts, chemists, detectives and counsel, duly appointed by him for the purpose, shall have full access, egress and ingress to all places of business, factories and farm buildings, carriages, cars, vessels and cans, used in the manufacture, transportation and sale of any dairy products, or of any adulteration or imitation thereof; and shall also have power and authority to open any package, can or vessel containing, or which may be supposed to contain, renovated butter, which may be manufactured, sold or exposed for sale in violation of any of the provisions of this act; and they shall also have power to take from such package, can or vessel samples for analysis, upon paying or tendering the value of such samples.

Section 15. The Dairy and Food Commissioner shall publish a semi-annual bulletin, and distribute the same in the same manner as other bulletins of the Department of Agriculture are published and distributed; which semi-annual bulletin shall contain the name and address of every person, firm or corporation to whom a license has been issued for the manufacture or sale of renovated butter and also a tabulated statement of all actions, civil or criminal, which have been brought for the violation of this act; giving the name and address of the defendant, and the disposition of every case.

Section 16. All parts of the act approved the fourth day of May, Anno Doimni one thousand eight hundred and ninety-nine, entitled "An act to regulate the sale of butter, produced by taking original packing stock and other butter and melting the same so that the butter oil can be drawn off, mixed with skimmed milk or other material, and by emulsion or other process produce butter, and butter produced by any similar process, and commonly known as "Boiled" or "Process" butter; providing for the enforcement thereof, and punishment for the violation of the same;" inconsistent with this act, are hereby repealed.

Approved—July 10, 1901.

FRESH MEAT, POULTRY, GAME AND FISH ACT.

AN ACT

To prohibit the selling, shipping, consigning, offering for sale, exposing for sale, or having in possession with intent to sell, as fresh, any meat, poultry, game, fish, or shell fish which contains any substance or article possessing a preservative or coloring character or action; making the same a misdemeanor; and to prescribe penalties and punishment for violations, and the means and the methods of procedure for the enforcement thereof.

Section 1. Be it enacted, &c., That if any person, firm or corporate body shall, by himself, herself or themselves, or by his, her, or their or its, agents or servants, sell, ship, consign, offer for sale, expose for sale, or have in possession with intent to sell, as fresh any meat, poultry, game, or shell fish which contains any substance, article or ingredient possessing a preservative character or action, or which contains any coal-tar dye, or any other substance or ingredient possessing a coloring character or action, shall be deemed guilty of a misdemeanor; and, upon conviction thereof in the court of quarter sessions of the peace of the proper county, shall be sentenced to pay a fine of not less than one hundred dollars nor more than two hundred dollars, and all costs, or to undergo an imprisonment in the county jail not less than sixty days nor more than ninety days, or both, at the discretion of the court: And, upon conviction of any subsequent offense, shall be punished by a fine of not less than two hundred dollars nor more than five hundred dollars, or be imprisoned not less than sixty days nor more than four months, or both or either, at the discretion of the court: Provided, That nothing in this section shall prohibit the use of ice as a preservative, or proper refrigeration.

Section 2. The Dairy and Food Commissioner shall be charged with the enforcement of all provisions of this act; and all penalties which may be recoverable, and all fines which may be paid, in any proceeding or proceedings to enforce the provisions of this act, shall be paid to the Dairy and Food Commissioner, or his agent, and by him paid into the State Treasury; and the money so paid shall constitute a special fund, for the use of the Dairy and Food

Commissioner in enforcing this act, and may be drawn out upon warrants signed by the Dairy and Food Commissioner or Secretary of Agriculture, and approved by the Auditor General.

Section 3. All acts or parts of acts inconsistent with this act are hereby repealed; but the repeal of said acts shall in no way interfere with, or prevent the prosecution to final termination of, any action or prosecution now pending, or which may be hereafter commenced for any violation of said acts, which has already been committed.

Approved—The 28th day of March, A. D. 1905.

IMITATION DAIRY PRODUCTS IN PENAL AND CHARITABLE INSTITUTIONS.

AN ACT

To prohibit the use of any adulteration or imitation of dairy products in any charitable or penal institution, being supplementary to an act, entitled "An act for the protection of the public health and to prevent adulteration of dairy products and fraud in the sale thereof," approved May twenty-one, Anno Domini one thousand eight hundred and eighty-five.

Section 1. Be it enacted, &c., That it shall not be lawful for any charitable or penal institution in the State of Pennsylvania to use, or furnish to its inmates, any substance, the manufacture or sale of which is prohibited by section one of the act, entitled "An act for the protection of the public health and to prevent the adulteration of dairy products and fraud in the sale thereof," approved May twenty-first, Anno Domini one thousand eight hundred and eighty-five.

Section 2. That any officer, agent, steward or other official of any such charitable or penal institution, who shall knowingly buy any substance the manufacture or sale of which is prohibited by section one of the said act of May twenty-one, Anno Domini one thousand eight hundred and eighty-five, for use in such charitable or penal institutions, or who shall knowingly cause such substance to be used by the inmates of such charitable or penal institution, shall be deemed guilty of a misdemeanor, and upon conviction shall be punished by a fine not exceeding one thousand dollars, or imprisonment not exceeding two years for each offense, or either or both at the discretion of the court.

Section 3. Every person who shall knowingly sell or offer for sale, to any officer, agent, steward or other official of any charitable or penal institution, any substance, the manufacture or sale of which is prohibited by section one of the said act of May twenty-first, Anno Domini one thousand eight hundred and eighty-five, for use in such charitable or penal institution, shall be deemed guilty of a misdemeanor, and upon conviction, shall be punished by a fine not exceeding one thousand dollars, or by imprisonment not exceeding two years, or either or both at the discretion of the court.

Approved—The 23rd day of May, A. D. 1893.

SUMMARY OF APPELLATE COURT DECISIONS AND OPINIONS RELATIVE TO OLEOMARGARINE, FOOD AND MILK STATUTES.

COMMONWEALTH NEED NOT FURNISH SAMPLES TO DEFENDANTS FOR ANALYSIS.

(IN THE COURT OF QUARTER SESSIONS OF BLAIR COUNTY.)

COMMONWEALTH
vs.
J. A. Koller, et al.

In re. rule to show cause why portions of samples taken by the Commonwealth should not be turned over to defendants for analysis.

BY THE COURT: "So far as the rule for a bill of particulars is concerned, as ruled by the Supreme Court in Commonwealth vs. Powell, 23 Sup. Ct. 372, a bill of particulars in a criminal case is not a matter of right, but is only an appeal to the sound discretion of the Court. My recollection is that in some of the pure food indictments in cases tried in this Court there was simply an allegation in the indictment that the pure food act had been violated, without specifying the particular violation. I am inclined to think that that indictment was perfectly good. We have our Act of Assembly which provides that an indictment shall be deemed sufficient which simply follows the words of the Act of Assembly, and if this indictment had simply followed the words of the Act of Assembly, and been in the general form with which we found other indictments, we would feel it but right and proper that the Commonwealth should specify the particular article of food which was supposed to be adulterated, and at least specify in a general way how that particular article of food was adulterated; but in the present instance the particular article of food is specified, to wit, chocolate, and there is a general statement as to how it is adulterated.

I think we will all agree on a moment's reflection that the rulings of the appellate courts on this subject are perfectly right and proper. The authority cited by Mr. Baldridge is not analagous authority at all. In the first place, as stated by Mr. Woodward, the physical examination to which the plaintiff is compelled to subject himself is always made—and I am speaking only as to the orders of—is always in the presence of the physician of the plaintiff, I have drawn frequent orders compelling plaintiffs in damage cases to submit to physical examinations, but I was always careful to provide that the physician of the plaintiff should be present so that no unfair advantage could be taken of the plaintiff, and that everything that was done there was done in the presence of the physician of the plaintiff. But, it seems to me that the endeavor to liken a civil proceeding to a criminal proceeding is fallacious, and that is the vice of the offer. In a civil proceeding the plaintiff may be compelled to subject himself to a physical examination. At the same time, he has the mutual and co-ordinate right of compelling defendant to disclose his case. Not so in a criminal case. The defendant can hold all the papers in his possession, and there is no power to compel him to produce them. He can sit on the witness stand and say, "I have a paper at home," and the Court is powerless to make him produce evidence to establish his guilt. That is one reason. In the second place a civil suit is tried on the weight of the evidence. Each party comes in with an equal right to be heard as to the measure of proof, but in a criminal suit the burden is on the Commonwealth to establish the case beyond a reasonable doubt, and these maxims of ours about the reasonable doubt that the jury must come to the firm, unwavering conviction that the defendant is guilty, have come to us from times when judges were wont to hang a man for stealing a loaf of bread. Now I do not say in the present criminal procedure that we should get away from those old maxims, but I do say that while we adhere to those old maxims, (which we adopted when they hung men for stealing a loaf of bread,) such maxims ought not to be applied against the Commonwealth on the one side, and, then, on the other hand, the Commonwealth be compelled to disclose all their case; and the absence of precedent to my mind is strong proof that there is no warrant for a Court compelling the Commonwealth to submit their evidence in advance to the defendant.

It does seem to me that the able criminal lawyers who have defended criminals charged with grave offenses, if there was any warrant for such a precedent, would have brought it in force. Take for instance a murder case. The Commonwealth claims that they found on the prisoner a bloody shirt, and that the blood stains are human blood, not chicken blood, or blood which he received butchering a hog, but human blood; now we all know that the experts on the part of the defense coach the lawyers for the defense while they cross-examine the experts of the Commonwealth, but I do not think there would be any warrant for a defendant charged with murder to say "you must tear that shirt in two, and you must give my chemist one-half of the alleged blood stains so that they can prepare a defense;" or, to put it more mildly, that they can have the alleged blood stains analyzed. I do not know of any such precedent, and the very fact that Mr. Baldridge, after diligent search, has been unable to find one, to my mind is proof that there is no warrant to force the Commonwealth to produce the evidence they are going to submit. As I said before, in a civil suit, under certain equitable rules, each side must apprise the other side of what evdence they are going to use, but I do not think it would be fair to say to the Commonwealth, you must give the defendant all your side of the case so that he can examine and ransack it, and at the same time allow the defendant to keep his mouth shut. It seems to me that would be giving a defendant an unfair advantage, and it seems to me it would be unfair to compel the Commonwealth to allow a defendant to subject their samples to examination in advance, and I will overrule the application for the compelling of the production of such samples.

As to experiments in open Court, I do not know to what extent I will go about a matter of that kind. I did rule in the formaldehyde cases where Mr. Hicks wanted to take a drink of the preservative, and wanted the Court to take a drink of it, and let the jury take a drink of it, I did rule that he could take a drink, but the Court would not, and would not have the jury do so. Mr. Hicks was going to turn the Court into a laboratory, and I think we said we would not have any laboratory here in Court. I do not know to what extent I would go if there was an effort on the part of the defendant to examine samples by microscopic tests—I will leave that matter open."

I hereby certify that the foregoing is a correct transcript of the opinion of the Court in the case of Commonwealth vs. J. A. Koller, et al., in re. rule for turning over of portion of sample taken by Commonwealth.

J. F. MECK,
Official Stenographer,
Courts of Blair County.

COURT OPINIONS.

LEGISLATIVE POWERS, DELEGATING POLICE POWER, LEGISLATURE CAN REGULATE FOOD SUPPLY.

Powell vs. Commonwealth, 114 Penna. 265.

Powell vs. Commonwealth, 127 U. S. 678. (Act of May 21, 1885.)

Nothing but a clear violation of the Constitution—a clear usurpation of power prohibited—will justify the judicial department in pronouncing an Act of the Legislative department unconstitutional and void.

The Act of May 21, 1885, P. L. 22, relating to oleomargarine, clearly falls within the police power of the State. Test of a police regulation prohibiting the making and vending of a particular article of food is not alone whether it is in part unwholesome and injurious. A prohibition may stand as a reasonable police regulation for the benefit of the public, if we believe that the only way to prevent the public from being defrauded into purchasing the counterfeit article for the genuine, is by such prohibition. The fact that scientific experts may pronounce a manufactured product intended for human food to be wholesome and not injurious, and that in a pure state, it may thus be good for food, does not render it incompetent for the legislature to prohibit the manufacture and sale of the article, if in the judgment of the legislature, and not of the courts, it be necessary for the protection of the lives, health and property of the citizens, and to the preservation of good order and the public morals. The Act of May 21, 1885, is not in conflict with Amendment XIV, of the Constitution of the United States.

OLEOMARGARINE SERVED WITH MEALS, RESTAURANT KEEPERS TO BE LICENSED.

Commonwealth vs. Miller, 131 Penn. 118.

A restaurant keeper furnishing oleomargarine to a customer, as a part of a meal ordered by the latter, violates thereby both the letter and spirit of Sec. 3, Act of May 21, 1885, P. L. 22, which provides that every person * * * who shall manufacture, sell, or offer, or expose for sale, or have in his * * * possession with intent to sell," oleomargarine, "shall, for every such offence, forfeit and pay the sum of one hundred dollars."

GUILTY KNOWLEDGE NOT NECESSARY. SELLING OR SERVING OLEOMARGARINE IN IGNORANCE OF ITS TRUE CHARACTER NO BAR TO PROSECUTION.

Commonwealth vs. Weiss, 139 Penna. 247.

Guilty knowledge, or guilty intent, is, in general, an essential element in crimes at law; but, whether a criminal intent, or a guilty knowledge, is a necessary ingredient of a statutory offence is a matter of construction, to be determined from the language of the statute, in view of its manifest purpose and design.

One who sells "oleomargarine," in ignorance of its real nature, is nevertheless liable for the penalty imposed by Sec. 3, Act of May 21, 1885, P. L. 22, which contains nothing to imply that the forbidden act must have been done knowingly or wilfully; to construe the act so as implying would defeat its manifest intent.

ORIGINAL PACKAGES, WHEN ORIGINAL PACKAGE IS BROKEN, SUBJECT TO STATE LAWS.

Commonwealth vs. Paul, 148 Penna. 559.

The Act of May 21, 1885, P. L. 22, (oleomargarine), which in its first and third sections prohibits the sale of oleomargarine, being a regulation enacted for the protection of the public health, is a constitutional exercise of the police power of the State, and is, therefore, not unconstitutional. Where oleomargarine was brought into this State in a package containing ten pounds, and out of this package two pounds were sold and delivered in a paper package, duly branded and stamped in the manner prescribed by the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, it was held that there was a breaking of the original package, and thereby the contents of it became a part of the common mass of property within the State.

CONSTITUTIONALITY OF LAW. DEFINING MULTIPLICITY OF SUITS.

Commonwealth vs. Shirley, 152 Penna. 170.

The Act of May 21, 1885, P. L. 22, entitled "An act for the protection of public health, and to prevent the adulteration of dairy products and fraud in the sale thereof," is constitutional: Powell vs. Commonwealth 114 Pa. 265, reaffirmed.

It seems that the sale of oleomargarine and the subsequent exposure of it for sale on the same day are not separate offences for which a double penalty can be imposed under the Act of May 21, 1885.

If, however, the double penalty imposed by the court is less than the maximum fine for the one offence as provided by the act, the Supreme Court will not reverse the judgment.

MULTIPLYING PENALTIES IN OLEOMARGARINE SUITS, DEFINING CERTAIN RIGHTS OF DEFENDANTS.

Commonwealth vs. Roberts, 152 Penna. 174.

The selling of oleomargarine, the having it in possession, and the exposing of it for sale on the same day, are not separate offences under the Act of May 21, 1885, for which penalties can be multiplied. The sale in such a case embraces all that has gone before and leads up to it, as necessary incidents, and constitutes one completed violation of the act.

THE RIGHT OF APPEAL. WHEN APPEALS WILL BE QUASHED.

Commonwealth vs. Callahan, 153 Penna. 625.

Where there is no reservation in a case stated of a right of appeal or certiorari, the decision of the lower court is final, and an appeal to the Superior Court will be quashed.

OLEOMARGARINE AS AN ARTICLE OF FOOD. MUST BE PURCHASED AS SUCH TO SUCCESSFULLY PROSECUTE.

Commonwealth vs. Schollenberger, 153 Penna. 625.

A person cannot be convicted of violating the Oleomargarine Act of April 21, 1885, P. L., 22, unless it affirmatively appears that it was sold as an article of food. The law reads when sold "as an article of food."

OLEOMARGARINE IN ORIGINAL PACKAGE. TO BE SOLD AS "AN ARTICLE OF FOOD."

Commonwealth vs. Madden, 153 Penna. 627.

In this case the defendant filed affidavit that oleomargarine was sold in an "original package," and that it was not sold "as an article of food." Court discharged the rule without filing an opinion. Held, on an appeal and certiorari to the Supreme Court that the judgment should be affirmed.

AGENT FOR NON-RESIDENT MANUFACTURER. DEFINING LAW RELATING TO "ORIGINAL PACKAGES," ETC.

Commonwealth vs. Schollenberger, 156 Penna. 201.

A non-resident who comes into this State to embark in business, is in the same situation as that of a resident, and the business done at his store is State, and not inter-state commerce.

A non-resident manufacturer of oleomargarine who sells his product in this State at a store, managed by an agent with an internal revenue license, is not engaged in inter-state commerce, and his agent is amenable to the penalties of the oleomargarine Act of May 21, 1885, P. L. 22.

An "original package" is such form and size of package as is used by producers or shippers for the purpose of securing both convenience in handling, and security in transportation of merchandise between dealers in the ordinary course of actual commerce.

Where a mode of putting up a package is not adapted to meet the requirements of actual inter-state commerce, but the requirement of an unlawful inter-state retail trade, the dealer will not be protected on the ground that he is selling an original package.

A case stated averred in substance that defendant was an agent of a non-resident manufacturer of oleomargarine, and that he sold at his store in this State, a package of oleomargarine weighing eighty pounds, made and stamped and branded in Rhode Island, for use as an article of food. Held, that the statement did not amount to an assertion that the sales were made in the "original packages" of commerce.

Leisey vs. Hardin, 135 U. S. 100, held that goods in the original packages with seals unbroken, and no sales having been made therefrom were not liable to seizure under the police laws of the state into which they had been brought. Beyond this it does not go. Com. vs. Zelt. 138 Pa. 615, discussed and applied.

PROPER SUBJECT OF COMMERCE. STATE CANNOT TOTALLY EXCLUDE AND PREVENT SALE OF OLEOMARGARINE.

Commonwealth vs. Schollenberger, 171 U. S. 1.

Oleomargarine is a proper subject of commerce among the States and with foreign nations.

The fact that inspection or analyses of the article imported may be somewhat difficult and burdensome will not justify a State in totally excluding a pure and healthy food product.

The State cannot absolutely prohibit the introduction within its borders of an article of commerce which is not adulterated, and which in its pure state, is healthful, simply because such article in the course of its manufacture may be adulterated by dishonest manufacturers for the purpose of fraud or illegal gains.

As Congress taxes oleomargarine and recognizes it as a proper subject of commerce, it cannot be totally excluded from a State, simply because the State decides that, for the purpose of preventing the importation of an impure or adulterated article it will not permit the introduction within its borders of the pure and unadulterated article.

Sale of the ten pound package of oleomargarine manufactured and imported and sold by the importer, under the circumstances stated, was a valid one, although sold to a person who was a consumer.

An importer may sell original packages of oleomargarine by an agent, as well as personally, to consumers as well as wholesale dealers, and the exercise of this right was not prevented by the fact that the packages were suitable for retail trade.

The same opinion declared the Pennsylvania statute of 1885 invalid so far as it prohibited the introduction of oleomargarine from another State.

OLEOMARGARINE LAW CONSTITUTIONAL. NOT AT VARIANCE WITH CONSTITUTION OF THE UNITED STATES.

Commonwealth vs. McCann, 198 Penna. 509.

In this opinion the Act of May 5, 1899, P. L. 241, relating to the sale of oleomargarine, was declared as not in conflict with Article 1, Section 1 of the Constitution of Pennsylvania, nor Section 1 of the fourteenth amendment of the Constitution of the United States.

COURTS CAN ISSUE INJUNCTIONS. ILLEGAL SALES OF OLEOMARGARINE CAN BE RESTRAINED. POLICE POWERS.

Commonwealth vs. Andrews, 211 Penna. 110.

Section 9, of the Act of May 29, 1901, P. L. 327, conferring jurisdiction upon the court of quarter sessions to issue a restraining order enjoining a defendant from further selling oleomargarine without a license, is a constitutional exercise on the part of the legislature of the police powers of the State. The proceeding authorized by the section is in no way equitable in character, and such as should be within the jurisdiction in equity vested in the court of common pleas.

No question of the right of trial by jury arises in such a proceeding, and even if there were, there is nothing in the constitution which prohibits the legislature from declaring new offences and defining the mode by which the guilt of the persons accused thereof may be determined.

REAFFIMERD CONSTITUTIONALITY. OLEOMARGARINE ACT OF 1901 CONSTITUTIONAL.

Commonwealth vs. Caulfield, 211 Penna. 644.

The court decreed that the Act of May 29th, 1901, P. L. 327, relating to the sale of oleomargarine, is constitutional.

INTER-STATE COMMERCE, ETC. HOW SALE OF OLEOMARGARINE IS REGULATED.

Commonwealth vs. Paul, 170 Penna. 284.

A package devised by a non-resident manufacturer, or put up by him, adapted for sale at retail to individual consumers, such for example as a flask of whiskey or a tub or pail or roll of oleomargarine, and actually sold by him or his agent to the consumer for use as an article of food or drink, in violation of the laws of the State where such sales take place, is not an "original package" within the meaning of the law relating to inter-state commerce; and the punishment of such sales under the police power of the State is not an interference with the powers of Congress, or with the commerce between the States which is protected by the Constitution of the United States.

The character of the package whether the original or not, is a question of fact for the jury when there are facts to be passed upon bearing upon this question; when the facts are however, agreed upon, or presented by a special verdict, the question is one of law, and should be decided by the court.

Where a small package is prepared in another State and brought into this State, and sold at retail, it is fair to presume that the package was intended by him who devised it for the purpose for which he used it in his business.

A small tub of oleomargarine containing ten pounds, prepared in another State and brought into this State to be sold unbroken to a consumer for use as an article of food upon his table and actually so sold, is not an original package within the meaning of the law relating to inter-state commerce.

The fact that a dealer in oleomargarine has procured a license from the Internal Revenue Department of the United States authorizing him to deal in oleomargarine, does not authorize him to engage in the manufacture or sale of oleomargarine in violation of the State laws lawfully passed forbidding or regulating such manufacture and sale.

CONTRACT OF SALE. HOW CLAIMS ARE RECOVERABLE.

Braunn vs. Keally, 146 Penna. 519.

The court decreed, that the contract was a contract of sale; not of agency; and, being made and executed on delivery to the carrier in Illinois, where the vender lost his control over the goods, the agreed price was recoverable from the defendant in this State, notwithstanding the prohibitive provisions of the Act of May 21, 1885, P. L. 22.

Knowledge that the defendant might, or even that he intended to violate the laws of this State, could not vitiate a contract made and executed in another State. The dominion of the vendor ceased before there was any violation of the law in Pennsylvania, and even the purchaser then had the locus poenitentiae.

An averment that the plaintiffs violated an agreement to give the defendants the exclusive sales-agency, and afterwards adjusted the damages therefrom by agreeing to a certain deduction from their claim, without averring that the goods sued for were bought on the faith of the agreed agency and remained unsold, set forth no real defence.

OLEOMARGARINE LAW VALID. ACT NOT IN VIOLATION OF THE UNITED STATES CONSTITUTION.

Walker vs. Commonwealth, 11 Atlan 623.

Plaintiffs were manufacturers of oleomargarine. They were indicted for its manufacture and sale contrary to the provisions of the Pennsylvania Act of May 21, 1885, entitled "An act for the protection of the public health, and to prevent adulteration of dairy products, and fraud in the sale thereof." Held that the act was not in violation of the fourteenth amendment to the United States Constitution.

OLEOMARGARINE COLORING vs. BUTTER. COLORING BY VENDOR PUNISHABLE.

Commonwealth vs. VanDyke, 13 Superior 484.

The Act of May 5, 1899, P. L. 241, regulating the manufacture and sale of oleomargarine, butterine, etc., is not in conflict with or in violation of the Constitution of the United States, giving to Congress the exclusive power to regulate commerce between States.

The plain intention of the legislature to be extracted from the Act of 1899 is to prohibit the imitation of yellow butter by any admixture or addition to oleomargarine during or after manufacture. The legislature may punish the manufacturer or vendor of oleomargarine for adding any color thereto. The effect of the statute is that butter may be colored yellow, but oleomargarine may not be so colored. This opinion reviews oleomargarine legislation at length, consequently is of special interest.

HOW DEFENDANTS ARE PUNISHABLE. FINE AND IMPRISONMENT MAY BE IMPOSED.

Commonwealth vs. Diefenbacher, 14 Superior 264.

The Act of May 5, 1899, P. L. 241, does not offend against any provision of the Constitution in that it provides for a penalty for the sale of oleomargarine under certain conditions, and also makes the same act a misdemeanor. The penalty recovered in the civil action and the fine and imprisonment imposed in the criminal prosecution, are but parts of one punishment.

OLEOMARGARINE LAW CONSTITUTIONAL. NO INFRINGEMENT UPON INDIVIDUAL RIGHTS.

Commonwealth vs. McCann, 14 Superior 221.

That the Act of May 5, 1891, P. L. 241, regulating the sale of oleomargarine is constitutional has been construed in Com. vs. Vandyke, 13 Pa. Superior Ct. 484.

The Act is what its title indicates, a regulation; not a prohibition of the manufacture and sale of oleomargarine. Such regulation does not conflict with commerce clause of the National Constitution, and it cannot be declared to be an infringement of the rights of the citizen secured by Section 1, Article 1, of the State Constitution, or by the 14th amendment of the National Constitution.

HOW OLEOMARGARINE PENALTIES ARE PROVIDED.

Commonwealth vs. Fink, 16 Superior 191.

Where two indictments are found against the same person for illegal sales of oleomargarine, and the first indictment charges an offence committed on June 3, 1900, and the second indictment charges an offence committed on July 6, 1900, the court has no power to impose a sentence of imprisonment on the first indictment, and merely a fine upon the second indictment, since the Act expressly provides that the punishment for the first offence shall be a fine only, and any subsequent offence a fine and imprisonment.

JAIL SENTENCES; WHEN IMPOSED. SUBSEQUENT OFFENCE NECESSARY.

Commonwealth vs. Neill, 16 Superior 210.

To warrant the court in sentencing a defendant to jail under the Act of May 5, 1899, the record must affirmatively show that he has been convicted of a subsequent offence; which, in contemplation of the act, is one that has been adjudicated according to law subsequent to a former conviction of the same defendant of an offence of the same character, committed prior to the offence charged in the second indictment.

THE QUESTION OF APPEALS. CONSTITUTIONAL LAW.

Commonwealth vs. Schollenberger, 17 Superior 218.

It is improper to take one appeal where three indictments against the same person are tried before the same jury, but separate verdicts and judgments are entered.

A motion in arrest of judgment is not the proper mode of raising questions as to the sufficiency of the evidence.

The Act of May 5, 1899, P. L. 241, regulating the sale of oleomargarine is constitutional.

SALE OF RENOVATED BUTTER. LAW CONSTITUTIONAL. IGNORANCE OF ARTICLE OR LAW NO EXCUSE.

Commonwealth vs. Seiler, 20 Superior 260.

The Act of July 10, 1901, P. L. 643, relating to the manufacture and sale of "renovated butter" is a proper exercise of the police powers of the State, and is declared constitutional.

It is not an improper exercise of the police power to require that "renovated butter" should be labeled, so as to distinguish it from creamery butter.

A dealer in butter who has bought renovated butter as for creamery butter, and sells it as such in good faith, is fully liable under the Act of July 10, 1901, for not having taken out a license. In such a case the intention of the violators of the law is immaterial. The Commissioner cannot favorably consider such allegation of innocence.

SOLICITING ORDERS FOR OLEOMARGARINE. ORIGINAL PACKAGES DISCUSSED.

Commonwealth vs. Leslie, 20 Superior 529.

A person may be convicted of selling oleomargarine unlawfully colored in imitation of butter in violation of the Act of May 5, 1899, P. L. 241, where it appears that he solicited orders for the article, and received pay for the same at the time the orders were given; that he sent the orders, together with the money, to a manufacturer in another state; that the manufacturer packed the several parcels ordered in one crate or box and addressed and sent the same to the dealer as "agent," and that the latter distributed the parcels to the several persons who had ordered them.

In such case it is immaterial that the dealer did not receive a commission from the manufacturer.

Where bottles or packages are fastened together and are marked or are packed in a large box, barrel, crate or other receptacle, the outside box, bundle or receptacle, and not any box or package contained therein, constitutes the original package, and this is equally true although each bottle or package is separately wrapped in paper, and labelled, "Original package," with the name of the importer.

COURT CAN RESTRAIN ILLEGAL SALES OF OLEOMARGARINE. LEGISLATURE CAN DECLARE NEW OFFENCES AND DEFINE PUNISHMENT.

Commonwealth vs. Andrews, 24 Superior 571.

Section 9 of the Act of May 29, 1901, P. L. 327, conferring jurisdiction upon the court of quarter sessions to issue a restraining order enjoining a defendant from further selling oleomargarine without a license, is a constitutional exercise on the part of the legislature of the police power of the State. The proceeding authorized by the section is in no way equitable in character, and such as should be within the jurisdiction in equity vested in the court of common pleas.

No question of the right by trial by jury arises in such a proceeding, and even if there were, there is nothing in the Constitution which prohibits the legislature from declaring new offences and defining the mode by which the guilt of the persons accused thereof may be determined.

PENALTY FOR PUBLIC OFFENCE. MAGISTRATES' RECORDS; HOW PROCEEDINGS ARE TO BE RECORDED.

Commonwealth vs. Davidson, 11 Superior 130.

An appeal lies from the judgment of the common pleas on certiorari to the judgment of an alderman for penalty due the Commonwealth for an offence; such a proceeding in nature and effect is a proceeding for a criminal offence.

In an action which in its true nature and effect, is a proceeding for the punishment of a criminal offence, although in form an action of debt, it is still essential that the record shall contain a finding set forth in express terms, or to be implied with certainty, that a special act has been performed by the defendants, and that it shall describe or define it in such a way as to individuate it, and show that it falls within the unlawful class of acts. Without this, a judgment that the law has been violated goes for nothing.

QUESTION OF COLOR IN OLEOMARGARINE. ADMISSIBILITY OF EVIDENCE.

Commonwealth vs. Mellet, 27 Superior 41.

Relative to incompetent evidence, the court decreed that the admission of such evidence will not be grounds for reversal where it is afterwards rendered incompetent by the introduction of other evidence.

Where on the trial of an indictment for selling oleomargarine colored to look like yellow butter, a sample of white oleomargarine and a sample of creamery butter are admitted for the purpose of comparison, but without any evidence as to genuineness of the samples, the judgment against the defendant will not be reversed for that reason, if it appears that an expert witness subsequently testified that the samples were what they were alleged to be.

In an indictment for the sale of colored oleomargarine, where the evidence shows that the color was due to cotton-seed oil, it is proper to sustain an objection to the following question asked upon cross-examination: "And cotton-seed oil, as an ingredient, is recognized as a legitimate ingredient, is it not?" A reply would involve for a complete answer a construction of the statute, which is not within the province of the witness to give.

On the trial of an indictment for selling oleomargarine colored yellow to resemble butter, if it is competent for the defendant to prove that cotton-seed oil is, in a commercial sense, a necessary constituent of oleomargarine, it is equally competent for the Commonwealth to introduce the explanatory proof in rebuttal that the necessary use of cotton-seed is not to give the product in which it is used the color of yellow butter.

On the trial of an indictment for selling oleomargarine "made or colored so as to resemble or be in imitation of yellow butter," a conviction may be sustained, although there is not evidence of the artificial coloration of the oleomargarine by the addition, thereto, in the process of manufacture or afterwards, of any substance which had no other function than to cause it to resemble and be an imitation of yellow butter. A consideration of the subject shows that the latter act is not to be given a construction which will restrict it to "artificial coloration."

ABSENCE OF SAMPLE IN SUIT. SAMPLE NEED NOT BE PRODUCED.

Commonwealth vs. Caulfield, 27 Superior 279.

On the trial of an indictment for the illegal sale of oleomargarine, witnesses may be permitted to testify as to the resemblance of the article sold, to yellow butter, without the Commonwealth being required to explain the non-production of the article itself.

Where on the trial for an indictment for the illegal sale of oleomargarine, the defendant alleges that all oleomargarine, where there is no ingredient introduced solely for coloring purposes, is naturally yellow in color, the Commonwealth may be permitted, in rebuttal, to introduce in evidence, a sample of oleomargarine white in color.

The court also decreed that the Act of May 29, 1901, P. L. 327, relating to the sale of oleomargarine is not unconstitutional as being insufficient in title.

ADULTERATED MILK. RESPONSIBILITIES FOR THE SALE OF ADULTERATED MILK BY EMPLOYES.

Commonwealth vs. Hough, 1 Distr. 53.

Adulterated milk means milk diluted with water, or by the addition of water or ice to the milk. Skimmed milk, containing less than a certain per cent. of cream, is deemed to be adulterated; likewise, milk that contains less than 12½ per cent. of milk solids. Proof that milk contains less than the required percentage of cream or milk solids, must be given before the party selling it can be convicted of selling adulterated milk.

An admission by employe that he skimmed milk by direction of defendant, coupled with proof of sale of skimmed milk from unmarked cans, warrants the inference by the jury that if the employe violated the law in one respect, by direction of his employer, he violated it in another, and watered the milk by the same authority.

The Act of May 25, 1878, P. L. 144, P. L. 131, is not unconstitutional, in that it provides for a fine, and also for imprisonment until fine be paid.

Quaere, whether the Act of May 8, 1899, is unconstitutional, in that cities of the first class, boroughs and townships were omitted, not decided.

Protective legislation, regarding milk, reviewed by the court, and the several acts collated.

CLAIMS IN ADULTERATED MILK CASE. MILK ACT DECLARED CONSTITUTIONAL.

Commonwealth vs. Darlington, 9 Distr. 700.

An indictment can be sustained under the Act of June 26, 1895, P. L. 317, for adding water to milk, as the quality, strength and purity of the milk is affected thereby, and it is not necessary to sustain a conviction under the indictment, to produce evidence that the defendant took water and put it into the milk.

The misdemeanor is in no manner qualified or reduced by the fact that the defendant sold the milk as "condemned" milk, nor will it do to say that the probability that the lactometer is an inaccurate instrument justified the defendant in so doing.

There being a doubt whether or not the Act of May 25, 1878, P. L. 144, was repealed by the Act of June 26, 1895, P. L. 317, sentence will be imposed under the last named Act.

OLEOMARGARINE IN CHARITABLE AND PENAL INSTITUTIONS PROHIBITED. LAW DECLARED CONSTITUTIONAL.

Commonwealth vs. Webster, 13 Distr. 199.

The Act of May 23, 1893, P. L. 112, which provides "that it shall not be lawful for any charitable or penal institution in the State of Pennsylvania to use or furnish to its inmates any substance, the manufacture and sale of which is prohibited by Section 1 of the Act entitled............approved May 21, 1885," and makes it a misdemeanor for any officer of such institution to knowingly buy such prohibited substance for use therein, does not amend or extend the provisions of the Act of May 21, 1885, P. L. 22, but merely adds to it without modifying it, and is therefore supplementary to it as distinguished from amendatory, and does not violate Section 6, Art. III of the Constitution.

The Act of May 23, 1893, P. L. 112, does not violate Section I of the 14th amendment of the Constitution of the United States or Section 7, Art. III of the Constitution of Pennsylvania.

The Act of May 21, 1885, P. L. 22, is not repealed by the Acts of May 5, 1899, P. L. 241, and May 29, 1901, P. L. 327.

In re Oleomargarine in Charitable Institutions, 13 Dist. Reps. 78, approved.

A county poorhouse is a charitable institution within the purview of the Act of May 23, 1893, P. L. 112.

IMPORTANCE OF COMPLETE RECORD.- VALUE OF JUSTICE'S RECORD.

Hess vs. Monier, 1 Distr. 606.

In an action for a penalty, the cause of action must be distinctly stated on the record.

Where one is sued for the penalty prescribed for a violation of the Oleomargarine Act, May 21, 1885, the justices' record, to be sustained on certiorari, must show the particular offense with which the defendant was charged.

In a suit under that statute it is not necessary that there should be an information made as the basis of action. Nor is it necessary, as in a summary conviction, that the evidence should be returned as a part of the record.

In such a suit the justice may, after the testimony closes, amend his record so as to make the Commonwealh the plaintiff.

CERTIORARI TO MAGISTRATES. SELLING OLEOMARGARINE AS BUTTER.

Commonwealth vs. Blossom, 12 C. C. 580.

In a suit before a magistrate where the record shows a suit by A. to sue B. and C., for a penalty for a violation by defendant of the Act of May 21, 1885, (also reciting the title thereof), by selling oleomargarine as butter; and that after hearing plaintiff's witnesses, judgment was publicly rendered for plaintiff and against defendant, for the penalty prescribed by said Act, and costs of suit, the judgment will be reversed on certiorari.

OLEOMARGARINE "AS ARTICLE OF FOOD." STATEMENT MUST CERTIFY FACT.

Commonwealth vs. Schmidt, 13 C. C. 28.

In an action for unlawfully selling oleomargarine, the statement is insufficient if it does not aver that the oleomargarine was sold "as an article of food."

SALE OF DISEASED ANIMALS OR DISEASED FLESH. SAME DECLARED A MISDEMEANOR.

Commonwealth vs. Horn, 13 C. C. 164.

This decree in substance is as follows: Under the Act of March 31, 1860, which declares that "if any person shall sell or expose for sale the flesh of any diseased animal, or any other unwholesome flesh, knowing the same to be diseased or unwholesome, they shall be deemed guilty of a misdemeanor," it is a misdemeanor to sell to a butcher a live steer that is visibly suffering from a swelling on the jaw which proves to be the disease known as actinomycosis, or "lump-jaw."

The word "flesh" is interpreted to mean live flesh and dead flesh.

SALE OF RENOVATED BUTTER. HOW PENALTIES PRESCRIBED ARE TO BE COLLECTED.

Commonwealth vs. Nice & Schreiber, 13 D. R. 309.

The proper practice to recover the penalties imposed by Sections 7 and 8 of the Act of July 10, 1901, P. L. 463, relating to "renovated butter," is, under Section 7, for the justice to issue a summons in a civil action, and, after hearing, to enter a judgment for the amount of the penalty and costs; and, under Section 8, to issue a warrant for the defendant, and, after a hearing, to hold him for trial, if the evidence warrants it. When the justice issues a warrant under Section 8, and, after hearing, fines the defendant $100 and costs, he exceeds his jurisdiction.

SUMMARY CONVICTIONS. RECORD MUST DISCLOSE CAUSE OF ACTION.

Commonwealth vs. Cochran Creamery Co., 4 C. C. 253.

Regarding summary conviction, etc., the court decreed that a judgment of a justice for the penalty "for the violation of the Act of Assembly, approved May 21, 1885, entitled An Act for the protection of the public health, under the first and third sections of said Act," will not be sustained. The record must disclose a cause of action and some evidence of the acts constituting the offence, when the court will look into evidence of facts, on certiorari.

ADULTERATIONS OF FOOD, ETC. PURE FOOD LEGISLATION DISCUSSED.

Commonwealth vs. Wilson, 9 Del. 357.

Neither Section 2, 3 nor 4 of the Act of 26 May, 1893, P. L. 152, authorizing the President of the State Board of Agriculture to appoint an agent to execute and enforce all laws in relation to the adulteration or imitation of dairy products, and authorizing the said agent to appoint assistants to enter places of business and to open packages containing dairy products and take samples therefrom for analysis, nor Section 6 of the act of 26 June, 1895, P. L. 317, Violate Article 3, Section 27, of the Constitution of Pennsylvania, prohibiting the creation of a State office for the inspection of any merchandise, manufacture or commodity.

When a complaint describes the prosecutor as a certain official, the affidavit is made by the prosecutor as an individual, and the affidavit, and the indictment founded thereon, are good notwithstanding the Act of Assembly creating the office by virtue of which the official is acting, is unconstitutional.

The term "food" as used in the Act of 26 June, 1895, P. L. 317, includes milk, and a person offering for sale adulterated milk may be convicted of violating said Act.

The defendant was prosecuted for selling milk adulterated with water, and milk and cream containing boracic acid. The indictment contained twenty-seven counts based upon the Act of 26 June, 1895, P. L. 317, prohibiting the adulterating of food; five based upon the Act of 7 July, 1885, P. L. 260, prohibiting the sale of adulterated milk in cities of the second and third class, and nine based upon the Act of 10 June, 1897, P. L. 142, amended by the Act of 19 April, 1901, P. L. 85, prohibiting the sale of milk to which has been added boracic acid, etc. Held that the counts were not improperly joined. Held also, that the Commonwealth should not be required to elect upon which counts it would try the defendant.

Quaere. Not decided whether Section 6, Act of 26 June, 1895, P. L. 317, providing that the Dairy and Food Commissioner shall have the same power to enforce the provisions of that Act as given him to enforce the Act of 26 May, 1893, P. L. 152, by which he receives his appointment, violates Article III, Section 6, of the Constitution of Penna., providing that "no law shall be revived amended, or the provisions thereof extended or conferred without re-enacting and publishing the same at length."

TITLE OF ACT TO INDICATE MEANING. ARTICLES OF FOOD AND DRINK.

Commonwealth vs. Pfoutz, 22 Lanc. 102.

It is within the power of the Legislature to define the terms used in an Act of Assembly, but if a term is defined to include something not usually known by such term, some notice must be given in title.

The Act of June 26, 1895, P. L. 317, "to provide against the adulteration of food," is unconstitutional so far as it relates to the sale of blackberry brandy, although the second section defines "food" as used in the act to include "all articles used as food or drink."

COMPOUND COFFEE. SALE OF "MIXTURES" OR "COMPOUNDS."

Stevens & Wedlar's application, 5 D. R. 104.

A mixture compounded of coffee and a certain amount of chicory, wheat, rye or peas, dried and browned, and labelled "Best Rio," "Prime Rio," "French Rio," or "Broken Java," and the words "Coffee Compound," showing the nature of the mixture, cannot be sold in Pennsylvania; it is an adulteration within the meaning of the Act of June 26, 1895.

It would seem that it is difficult to define what are "mixtures or compounds recognized as ordinary articles or ingredients of articles of food, to which the Act does not apply. What are such, within the meaning of the Act, must depend upon the facts of each particular case, and the burden of proof is upon the one claiming that his "compound" is within the exemption.

ADULTERATIONS DEFINED. CONTAMINATION OF FOOD AND EFFECT THEREOF.

Commonwealth vs. Arow, 32 Superior 1.

Principal questions raised on this appeal were considered in Com. vs. Curry, 4 Pa. Superior Court, Rep. 356, and was implicitly passed upon in Com. vs. Kevin, 202 Pa. 23, in which cases indictments for the sale of adulterated food were sustained.

Adulteration has reference not only to the act of contamination but to the condition of the food as the result of such debasement. The act established precautionary measures against food adulteration, but also provides means to prevent sale.

A most obvious and effective method of guarding against the adulteration of food is to prohibit its sale.

The objection that the prosecution was brought by an agent of the Department of Agriculture is without merit. Whether an agent of the Department or not, the prosecutor had a right to institute the proceedings for a criminal violation of law.

SUITS BY AGENTS AND PRIVATE PARTIES. WHO MAY BRING PROSECUTIONS.

Commonwealth vs. Spencer, 28 Superior 301.

A conviction under the Pure Food Law of May 26, 1893, P. L. 152, as amended by the Acts of March 13, 1895, P. L. 17, and June 26, 1895, P. L. 317, will not be set aside on the ground that the information was made by a special agent of the Dairy and Food Commissioner, and that the office of Dairy and Food Commissioner was in violation of Article III, Section 27, of the Constitution, which provides that "no State office shall be continued or created for the inspecting or measuring of any merchandise, manufacture or commodity." In such a case the conviction does not depend upon the character of the person who instituted the proceeding, but upon testimony adduced at the trial for the violations of sections of the Acts already sustained as constitutional by the Appellate Courts.

Such sections are clearly severable and distinguished from any reference to the creation of the office of Dairy and Food Commissioner.

DUTY OF THE DAIRY AND FOOD COMMISSIONER. WHEN PROSECUTIONS SHALL BE BROUGHT.

Opinion by Attorney Gen'l Elkin. Pure Food Law Application, 11 D. R. 423.

Under the Pure Food Law of June 26, 1895, P. L. 317, it is the duty of the Dairy and Food Commissioner, if he finds in the State any adulterated food, which includes preserved meats or any other food product containing poisonous or injurious substances, or substances which depreciate or injuriously affect the quality, strength or purity of the same, or which contains diseased, decomposed, putrid, infected or tainted substances, to see that the provisions of the law are enforced against the persons making sale of the same.

USE OF OLEOMARGARINE IN CHARITABLE INSTITUTIONS PROHIBITED. PROSECUTIONS FOR VIOLATIONS OF LAW CAN BE SUSTAINED.

Oleomargarine in Charitable Institutions, 28 C. C. 290.

The Dairy and Food Commissioner can sustain a prosecution under Section 2 of the Act May 23, 1893, P. L. 112, against the directors of a charitable or penal institution for furnishing its inmates with oleomargarine, inasmuch as the Act of May 26, 1893, P. L. 152, authorizes and empowers the Dairy and Food Commissioner to enforcé all laws theretofore or thereafter enacted in relation to the adulteration or imitation of dairy products, particularly as Section 1 of the Act of May 26, 1893, which created the office of Dairy and Food Commissioner, charged the State Board of Agriculture with the enforcement of the provisions of the Act of May 21, 1885, P. L. 212.

The several Acts relating to oleomargarine distinguish between an offence committed by a manufacturer or seller, and an offence committed by the managers of a penal and charitable institution, the latter touching the regulation and discipline of such institutions.

PAYMENT OF RENOVATED BUTTER LICENSES. FEES TO BE PAID AT TIME OF APPLICATION.

Renovated Butter Licenses, 29 C. C. 112.

Under the Act of 1901, P. L. 643, the Dairy and Food Commissioner has no discretion, whatever, in the matter of extending the time for the payment of the license fee to sell renovated butter at wholesale. The fee must be paid at the time of the issuance of the license.

Attention is also called to the following decision:

Lesse 13 D. R. 512.

Under the Act of May 29, 1901, P. L. 327, the Dairy and Food Commissioner is without power to extend the time of payment of the fee for a license to sell renovated butter at wholesale.

OLEOMARGARINE SERVED WITH MEALS A VIOLATION OF LAW. MEANING OF OLEOMARGARINE LAW DEFINED.

Commonwealth vs. Miller, 131 Pa. 118.

A restaurant keeper furnishing oleomargarine to a customer, as a part of a meal ordered by the latter, violates thereby both the letter and the spirit of Section 3, Act of May 21, 1885, P. L. 22, which provides that "every person * * * who shall manufacture, sell, or offer, or expose for sale, or have in his ...... possession with intent to sell," oleomargarine, "shall, for every such offense, forfeit and pay the sum of one hundred dollars."

RESTAURANT KEEPER SERVING OLEOMARGARINE MUST BE LICENSED. APPEAL FROM SUMMARY CONVICTIONS.

Commonweatlh vs. Hendley, 7 S. C. 356.

A public caterer, who, for gain, furnishes oleomargarine as a part of a meal to his guests, is subject to the penalty provided by the Act of Assembly.

The discretion of the court below in refusing an appeal will not be disturbed, where the petition therefor is based on an allegation that, while the other constituents of the meal were sold, butter and oleomargarine were kept, for accommodation of the patrons of the establishment, for which no price was charged; this defense having been presented to the alderman and passed on by him.

Appeals from a magistrate on summary convictions should not be allowed, save for cause shown. The whole matter rests in the sound discretion of the court below, and an appeal to the Superior Court must be regarded as a substitute for a certiorari. Thompson vs. Preston, 5 Pa. Superior Court, 154 followed.

SUPREME COURT AFFIRMS CONSTITUTIONALITY OF OFFICE.

In the quo-warranto proceedings in the Supreme Court of Pennsylvania in the case of Commonwealth of Pennsylvania, ex-relatione Hampton L. Carson, Attorney General, vs. B. Harry Warren, Dairy and Food Commissioner, the honorable court presented a judicial determination to the effect that the office of Dairy and Food Commissioner was properly and legally provided by the General Assembly of the Commonwealth, thus confirming the right of his title and the powers which the aforesaid official may lawfully exercise under the several Acts of Assembly regulating his appointment, duties, etc.

The same opinion of the Supreme Court decrees that the Act creating the office contravenes no constitutional provisions, and that it is legislation in the interest of the public health and the general welfare. (March 7, 1907.)

ADDENDA.

Paul vs. Pennsylvania, 18 Supreme Court Reporter, (23 May, '98.)

Schollenberger vs. Commonwealth, 18 Supreme Court Reporter, (23 May, '98.)

Oleomargarine Licenses, 27 D. R. 655.

RULES AND REGULATIONS FOR THE ENFORCEMENT OF THE PROVISIONS OF THE FOOD ACT OF PENNSYLVANIA, APPROVED THE 13TH DAY OF MAY, A. D. 1909.

Harrisburg, Pa., June 15. 1909.

As required by Section 8 of the Food Act of Pennsylvania, approved the 13th day of May, A. D. 1909, the Dairy and Food Commissioner, charged with the enforcement of the provisions of said Act, has made the following rules and regulations for the enforcement thereof. These rules, where possible, conform to and are the same as the rules and regulations adopted for the enforcement of the Act of Congress, approved June 30, 1906, commonly known as the "Food and Drugs Act."

RULE NO. 1, SAUSAGE. Sausage or sausage meat shall be held to be a comminuted meat from neat cattle or swine, or a mixture of such meats, either fresh, salted, pickled or smoked, with added salt and spices and with or without the addition of edible animal fats, blood and sugar, or subsequent smoking. It shall contain no larger amount of water than the meats from which it is prepared, contain when in their fresh condition, and if it bears a name descriptive of kind, composition, or origin, it must correspond to such descriptive name. All animal tissues used as containers, such as casings, stomachs, etc., must be clean and sound and impart to the contents no other substance than salt. All sausage found to contain any cereal, or added water, or other substance, except as herein stated, shall be deemed to be adulterated.

RULE NO. 2, FRUIT PRESERVES, JAMS AND JELLIES. All fruit preserves, jams and jellies shall be true to name and contain nothing but the fruit after which they are called, together with sugar, except, that fruit butters may contain spices and vinegar.

Where glucose is used as a substitute for sugar, either in whole or in part, for the purpose of sweetening or cheapening an article of food, the substance should be marked to show the presence of glucose, such as glucose jelly, glucose jam, glucose fruit butter, together with the name of the fruit which gives it the flavor, in accordance with the provisions of the Act relating to branding.

RULE NO. 3, POWDERING AND COATING. The term "powdered," as used in the Fourth Clause of Section 3 of the Act, shall be held to mean the application of any powdered substance to the exterior portion of articles of food.

The term "coated," as used in the same clause, shall mean the application of any substance to the exterior portion of a food product.

RULE NO. 4, COATING OF RICE. No coating of any kind may be used for rice where the same is used to conceal damage or inferiority, or to make the rice appear of better or greater value than it is. In each case, whether or not such a result be secured, is a question of fact to be decided by the evidence.

RULE NO. 5, COLORS. The use of any dye, harmless or otherwise, to color or stain a food in a manner whereby damage or inferiority is concealed, or whereby the food is made to appear of better or greater value than it is, is specifically prohibited by law. The use in food for any purpose of any mineral dye, or any coal tar dyes not hereinafter listed, will be grounds for prosecution. Until further notice the coal tar dyes hereinafter named, made specifically for use in foods, and which bear a guaranty from the manufacturer that they are free from subsidiary products and represent the actual substance the name of which they bear, may be used in foods. The following coal tar dyes which may be used in this manner are given numbers, the numbers preceding the names referring to the number of the dye in question as listed in A. G. Green's edition of the Schultz-Julius Systematic Survey of the Organic Coloring Matters, published in 1904.

The list is as follows:

RED SHADES:
107. Amaranth.
56. Ponceau 3 R.
517. Erythrosin.

ORANGE SHADE:
85. Orange I.

YELLOW SHADE:
4. Napthol yellow S.

GREEN SHADE:
435. Light green S. F. yellowish.

BLUE SHADE:
692. Indigo disulfoacid.

Each of these colors shall be free from any coloring matter other than the one specified, and shall not contain any contamination due to imperfect or incomplete manufacture. (F. I. D. 76.)

RULE NO. 6, SODIUM BENZOATE AND SULPHUR-DIOXIDE. Under the fourth proviso of the Fifth Clause of Section 3, the following articles of food are designated as those articles of food in which benzoate of soda, or benzoic acid, have heretofore been generally used, to wit:

Catsup, mince-meat, sweet chow-chow, sweet pickles, preserves, jams, jellies, fruit-butter, shredded and dried cod-fish and cider, when used as a food ingredient.

For the purpose of this Act, one-tenth of one per centum of benzoate of soda, or benzoic acid equivalent thereto, may be used in the foods above enumerated, provided, the fact that sodium benzoate has been used in the preparation of such foods shall be plainly stated on each package thereof.

The use of sodium benzoate is not permissible in any other article of food, except those hereinabove designated.

The word "package," as used in the Fourth Proviso of the Fifth Clause of Section 3 of the Act, shall include all containers, whether supplied by the dealer or by the consumer.

RULE NO. 7, SODIUM BENZOATE AND SULPHUR-DIOXIDE, continued. When any quantity of sodium benzoate or sulphur-dioxide has been used in the preparation of a food, that fact shall be plainly stated on each package, and the Act also provides, under the Fourth Clause of Section 4, relating to misbranding, that the labeling of packages required by this Act shall be on the main label of each package, and in type not less than 8-POINT BREVIER CAPS in size, unless the size of the package will not permit the use of 8-POINT CAP type, in which case the size of the type may be reduced proportionately and in such position and terms as may be plainly seen and read by the purchaser.

Under these separate clauses the presence of sodium benzoate or sulphur-dioxide will be held to be plainly stated on each package of food when the fact of such presence is stated in such a way as that it may be plainly seen and read by the purchaser, in colors contrasting with ground on which it is placed and in character of type and position upon the container in conformity with the provisions of the Act.

RULE NO. 8, MEATS, PRESERVES AND SIMILAR FOOD SUBSTANCES THAT ARE LIKELY TO BE CONTAMINATED BY EXPOSURE TO FLIES AND OTHER INSECTS, OR EXPOSED TO THE DUST OF THE STREET OR THE STORE. Under the provisions of the Sixth Clause of Section 3 of the Act, an article of food is adulterated where the same is an animal or vegetable substance produced, stored, transported, or kept in a way or manner that would render the article diseased, contaminated or unwholesome. Under this Clause of the Act, meats, preserves and similar food substances that are likely to be contaminated by exposure to flies and other insects, or exposed to the dust of the street or store will be required to be kept screened so as to prevent all contamination.

RULE NO. 9, GUARANTY. The guaranty referred to in the Food Act of Pennsylvania, approved the 13th day of May, A. D. 1909, shall in all cases be a written or printed invoice guaranty, bearing the date of said invoice, upon each bill of goods purchased, signed by the vendor, and substantially in the following language, to wit:

I (or we) the vendor of the articles mentioned in the foregoing invoice, hereby guarantee and warrant the same to be in full conformity with the Act of the General Assembly of Pennsylvania, known, as the "NEW FOOD LAW," approved the 13th day of May, 1909, in that the said articles are not adulterated or misbranded within the meaning of the aforesaid Act.

(Signature)........................

RULE NO. 10, LABELS. Numerous requests are referred to this Bureau for the approval of labels to be used in connection with food products under the Food Act of Pennsylvania, approved the 13th day of May, A. D. 1909. This Act does not authorize the Dairy and Food Commissioner, nor any agent of the Bureau, to approve labels. The Bureau, therefore, will not give its approval to any label. Any printed matter upon the label implying that this Bureau has approved it will be without warrant. It is believed that with the law and regulations before the manufacturers, they will have no difficulty in arranging labels in conformity with the requirements set forth.

RULES Nos. 11, 12, 13 and 14.

Issued July 8, 1909.

RULE NO. 11, PREPARED MUSTARD. The names, prepared mustard, German mustard, French mustard, mustard paste, shall be used only to designate pastes composed of a mixture of ground mustard seed, or mustard flour, with salt, spices and vinegar, and calculated free from water, fat and salt, shall contain not more than twenty-four (24) per centum of carbohydrates, calculated as starch, determined according to the official methods, not more than twelve (12) per centum of crude fibre, nor less than thirty-five (35) per centum of protein, derived solely from the material named.

RULE NO. 12, FLAVORING EXTRACTS. The names, flavoring extract, flavor, flavoring, essence and tincture, as applied to articles intended for use in the preparation of foods, shall be used only to designate solutions in ethyl alcohol of proper strength of the sapid and odorous principles derived from an aromatic plant, or parts of the plant, with or without its coloring matter, and shall conform in specific name to the plant used in its preparation.

Flavoring solutions, in the preparation of which flavoring substances not derived from the plant specifically named have been added, shall not be designated as if prepared solely from the aromatic plant named.

An imitation flavoring extract shall not be given a name nor bear upon its label any statement, design or device that shall in any way indicate that it is the flavoring extract which it imitates.

RULE NO. 13, MARASCHINO CHERRIES. Maraschino cherries must not contain sulphurous acid, sulphur dioxide, sulphites, salicylic acid, or other preservative prohibited by law, nor any other ingredient deleterious to health, and if artifically colored, such coloring must be effected solely by the use of harmless animal or vegetable colors, or of the coal tar dyes named in Rule 5, and when so colored the fact shall be plainly declared on the label.

Subject: REVISION OF RULE No. 14.

PENNSYLVANIA DEPARTMENT OF AGRICULTURE.

Dairy and Food Bureau.

Rule NO. 14, REVISED.

Issued May 5, 1911.

RULE NO. 14, REVISED, CONFECTIONERY AND CHOCOLATE. Mineral substances of all kinds, whether poisonous or not, are forbidden in confectionery. The addition of any alcoholic liquor to confectionery is prohibited, and no alcohol may be added to it except as the alcohol occurs in the customary alcoholic tinctures or extracts used for flavoring purposes, or as a solvent for glazes.

The use of resinous glazes on chocolate and confectionery is not permitted for the reason that resins have no nutritive or dietetic value, but are known as the characteristic solid ingredients of varnishes, and that their introduction into foods would be repugnant to and not tolerated by the consumer if he were aware of the fact—so that their use in food would violate Clause 1, Section 3, Act of May 13, 1909, in that it would injuriously affect the quality and purity of the product concerned; also for the further reason that the resins, not being primarily intended for use in foods, are not gathered and handled in such manner as to fit them sanitarily for such use, and even, in the case of shellac particularly, are frequently admixed with poisonous or deleterious substances, such as sulphide of arsenic and litharge, so that their use would violate the spirit of Clause 6, and often of Clause 5, Section 3, of the Act above mentioned. This regulation, in its effect, is in harmony with Food Inspection Decision No. 119, under the National Food and Drug Act, June 30th, 1906.

Subject: RULE NO. 15, OYSTERS.

PENNSYLVANIA DEPARTMENT OF AGRICULTURE.

Dairy and Food Bureau.

RULE No. 15.

Issued January 12, 1911.

RULE NO. 15, OYSTERS. Oysters and other shell-fish whose water content has been increased, whether by 'floating' or 'drinking' in fresh water or salt water of less density than that in which they have been grown, by the addition of ice or water, or in any other manner, will be deemed adulterated.

SPECIAL NOTICE TO RETAIL DEALERS.

The new Food Act of Pennsylvania, approved the 13th day of May, A. D. 1909, protects innocent retail dealers when its provisions are complied with. In order to avail themselves of this protection, it is important that every retail dealer secure from the manufacturer, wholesaler or jobber from whom he makes purchases, a signed guarantee of each invoice of goods. In order that the goods may be subsequently identified, it is important that the date of purchase be marked upon the goods secured under each invoice. Where the goods are contained in separate packages, this identification can readily be secured by the use of a rubber stamp giving the date of purchase. Unless the retail dealer is able to identify with absolute certainty the vendor from whom his goods were procured, the Act will not protect him. This will require the greatest care, not only in marking the date of purchase, but in keeping the articles purchased from different manufacturers, wholesalers or jobbers bearing the same brand, entirely apart from each other, so that at any time the identification of the vendor of each article can be clearly established. It is equally important that the retail dealer shall keep the articles purchased in precisely the same condition as when they are received. A failure to distinctly identify the vendor, or to clearly prove that articles purchased have been kept in the exact condition as to quality as when purchased, will deprive the retail dealer of any protection.

When an agent of the Dairy and Food Bureau calls upon a retail dealer, it is requested and confidently expected that courtesy will be exercised both by the dealer and the agent.

JAMES FOUST,
Dairy and Food Commissioner.

OLEOMARGARINE AND RENOVATED BUTTER LICENSES.

RULES AND REGULATIONS FOR THE GUIDANCE AND GOVERNMENT OF PERSONS PROPOSING TO ENGAGE IN THE MANUFACTURE, SALE OR USE OF OLOEMARGARINE OR RENOVATED BUTTER.

1. No license will be granted to a non-resident of the State of Pennsylvania.

2. No license will be transferred from any person, firm or corporation convicted of any violation of the Acts of Assembly under which such license is issued, nor while proceedings are pending for violation of said Acts against such person, firm or corporation.

3. When a license has been issued to a certain address, a second license will not be issued to the same address for the same year or fractional part thereof.

4. No license certificate permits the sale of oleomargarine from wagons, or from any other place except that designated in said license certificate.

5. Remittance (either Bank Draft, Cashier's Cheque, or Certificate of Deposit, preferred), for license fees must accompany the application for license. Individual cheques must be certified by the bank on which same are issued or drawn. Cheques and drafts must be made payable to the order of the State Treasurer, and upon receipt thereof by the DAIRY AND FOOD COMMISSIONER, if the application is approved, a license certificate will be promptly issued.

6. The attention of intending applicants for license and of all licensees, is especially directed to that portion of Section 7 of the Act of 29th of May, 1901, which provides: "that upon conviction of

any subsequent offense, the person so offending shall be punished by a fine of not less than five hundred dollars, nor more than one thousand dollars, and by imprisonment in the county jail for not less than six months nor more than twelve months."

The express direction of said Act is imprisonment in addition to the minimum fine therein specified.

In addition to the fine and imprisonment imposed for second offenses, injunction proceedings will be instituted, and no license will be transferred from any person against whom such proceedings are pending.

LICENSE APPLICATION BLANKS SUPPLIED.

The Dairy and Food Commissioner will supply applicants with the proper printed blank forms which must be used by all applicants for oleomargarine and renovated butter license certificates. These forms furnish detailed information as to license fees, etc. They also show the respective periods of time for which licenses are issued. A certificate issued with the beginning of the year must include payment for the entire year, while those issued at a later period must include payment for the part of the year remaining, always dating from the first day of the month in which the application was filed.

SCHEDULE OF LICENSE FEES.

The following tabulated statement shows the respective amounts due the Commonwealth for the various licenses named, for the entire year, or fractional parts thereof, and checks or drafts must be sent for the correct amount.

Kind of License.	Cost of License.											
	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Manufacturer's license,	$1,000	$916 67	$833 34	$750 00	$666 67	$583 34	$500 00	$416 67	$333 34	$250 00	$166 67	$83 34
Wholesale license,	500	458 34	416 67	375 00	333 34	290 67	250 00	208 34	166 67	125 00	83 34	41 67
Retail license,	100	91 67	83 34	75 00	66 67	58 34	50 00	41 67	33 34	25 00	16 67	8 33
Hotel or restaurant license,	50	45 84	41 67	37 50	33 34	26 18	25 00	20 84	16 67	12 50	8 34	4 17
Boarding house license,	10	9 16	8 33	7 50	6 66	5 83	5 00	4 16	3 33	2 50	1 66	83

NAMES AND PLACES OF APPLICANTS.

If the application is signed by a firm name, kindly supply full names of partners constituting the firm; when signed by a company give name of president, secretary and general manager.

Sign names in full—for example: "John Jacob Doe," NOT "J. J. Doe."

It is also imperative that you give the number of the building in which your place of business is located and the street upon which it is situated. If it does not have a number, give the name by which it is known, or describe its location as nearly as possible by some well known landmark, in order that it may be definitely located.

This information is essential in order to secure a license certificate, and failure to furnish the same will mean indefinite delay in the issuing of said license certificate.

Two signs which will be supplied by the Dairy and Food Division, must be hung up in conspicuous places on the walls of the room or store in which oleomargarine is sold. Each package must be plainly marked "Oleomargarine," as the law directs, and oleomargarine or butterine must be "free from coloration or ingredients that cause it to look like butter."

This book should be returned to the Library on or before the last date stamped below.

A fine of five cents a day is incurred by retaining it beyond the specified time.

Please return promptly.